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Dissertation on

"STUDY OF ANXIETY, DEPRESSION, QUALITY OF LIFE AND ITS CLINICAL CORRELATES IN RENAL TRANSPLANT RECIPIENTS"

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CERTIFICATE

This is to certify that the dissertation titled, **"STUDY OF ANXIETY, DEPRESSION, QUALITY OF LIFE AND ITS CLINICAL CORRELATES IN RENAL TRANSPLANT RECIPIENTS"** is the bona fide work of **Dr. KURINJI G.R**, in part fulfilment of the requirements for M.D. Branch – XVIII [Psychiatry] examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2013. The period of study was from May 2012- November 2012.

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DECLARATION

I, **Dr. KURINJI G.R**, solemnly declare that the dissertation titled, **"STUDY OF ANXIETY , DEPRESSION, QUALITY OF LIFE AND ITS CLINICAL CORRELATES IN RENAL TRANSPLANT RECIPIENTS",** is a bona fide work done by me at the Institute of Mental Health, Chennai under the guidance and supervision of Dr. JAYAPRAKASH. M.D, D.P.M, Professor of Psychiatry, Madras Medical College.

The dissertation is submitted to The Tamilnadu Dr. M. G. R. Medical University towards part fulfillment for M.D. Branch XVIII [Psychiatry] examination.

Place:
Date:

Dr. KURINJI. G.R.

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ABBREVIATIONS

ESRD	End Stage Renal Disease
MMSE	Mini Mental State Examination
UNOS	United Nations of Organ Sharing
HAM - D	Hamilton Depression rating scale
HAM –A	Hamilton Anxiety Scale
PPS	Paradoxical Psychiatric Syndrome
GDP	Gross Domestic product

CONTENTS

INTRODUCTION:

It is a well established fact that psychiatric illness is more common among terminally ill patients. End stage renal disease is one such clinical condition in which patients are left with only two treatment options ,either dialysis procedure or renal transplantation, the second option being the ultimate choice.

Though transplantation offers a solution to overcome painful, uncomfortable, time - consuming dialysis procedures, many patients are noted to have emotional distress and affective disorders even after successful renal transplantation. More common among these are depression and anxiety often associated with an impaired quality of life. Further the recipients experience many challenges like fear of new organ being rejected and the need for strict adherence to immunosuppressive medications that may generate distressing side effects.

Several studies analyzed psychiatric morbidity such as depression , anxiety between dialysis patients and renal transplant recipients. But there are very few studies which compared depression and anxiety of the transplant recipients with that of the general population.(Alavi, Aliakbarzadeh, & Sharifi, 2009)

In studies conducted previously in this area some studies have concluded that anxiety and depression improves after renal transplantation because of some improvement in social functioning and feeling of psychological well being.(Pascazio et al., 2010) But there are also several other studies which had argued the exact controversial findings in their results.

Drug compliance after transplantation is now emerging as a health issue affecting patients quality of life in multiple domains. Several studies have shown that those patients having emotional problems like anxiety, depression, hostility, distress, lack of coping are more non compliant after transplantation than those without emotional problems.

One such research conducted in kidney transplant recipients came with a data that 50% of them suffered from anxiety and 25% from depression in the post transplantation period ,(Noohi et al., 2007)though there is less data from Indian studies regarding prevalence.

REVIEW OF LITERATURE

CONSULTATION -LIAISON PSYCHIATRY:

Consultation- liaison describes two interrelated roles of psychiatrists. Consultation provides expert opinion about the diagnosis and management of a patient when requested by another health professional. Liaison does the linking of groups for effective collaboration purposes. (Lipowski, 1986) In the current concept, this field mediates between patients and members of other clinical team with mental health professionals.

Liaison psychiatry is the branch of psychiatry which involves assessment and treatment of patients in general hospital setup like casualty, patients with tendency of deliberate self harm. The Indian scenario shows reference from medicine, surgery, superspeciality and orthopaedics with psychiatric disorders like anxiety, depression and organic brain syndrome , present in about 40 to 50% of the patients.

Though the Indian published data is limited, most tertiary hospitals in India carry out liaison work with various departments like neurology, organ transplant, intensive care units and cosmetic surgery so as to give comprehensive health services to patients(Parkar &

Sawant, 2010). In all probability ,an even more important need of research in the area of liaison psychiatry is to put together a “client profile” and develop tailor made services in the most advantageous way(Parkar & Sawant, 2010). These services are very well accepted by people and reduces stigma related to psychiatric illness.

HISTORY OF ORGAN TRANSPLANTATION:

Though solid organ and other tissue transplants had been attempted from 1900s, only in 1954 the first successful organ transplant was carried out by Joseph Murray using an identical twin brother as a kidney donor. Even after the successful surgery, routine organ transplantation was not possible till the challenge of suppression of the immune system was resolved.

After the development of chemical immunosuppression in the early 1960s the first deceased donor kidney, liver, lung, and pancreas transplants were performed, followed by the first heart transplant in the late 1960s.

It took nearly two decades to discover and develop cyclosporine, a specific and powerful immunosuppressant drug, providing selective immune regulation of T cells without excessive toxicity.

The U.S. Food and Drug Administration (FDA) had approved cyclosporine for use in solid organ transplantation in the year 1983 and this led to an increase in the numbers of transplants ,decrease in morbidity of transplant recipients, and increases in the patient survival rates in the post transplantation period .

Especially the number of kidney transplantation for end stage renal disease has increased drastically in the last 2 decades.

COURSE AND PROGNOSIS

Transplantation is a continuum process demarcated by specific phases. The end-stage organ disease heralds the beginning of the transplantation process. From pre transplant evaluation at the transplant program, to waiting on the list, followed by early and longer term recovery and adaptation to life as recipient of new organ, each and every phase is significantly linked with different type of life stressors and requires skills and resources from patients, caregivers, and the mental health professionals caring for them. Psychiatrists are most frequently called to evaluate the prospective transplant candidate.

PSYCHONEPHROLOGY:

Psychonephrology is the systematic study of psychiatric effects of renal dialysis and kidney transplantation. The pioneers in this field of consultation liaison psychiatry are the late Harry Abram ,Denour et al ,Atarka Kaplan and Levy Viederman.

Psychiatric morbidity must be considered similar to other postoperative medical and surgical problems. Psychiatrists in this unit have to face some difficulty in ruling out organicity from adjustment disorder, mood disorder, anxiety disorder (Kornfeld, 2002).

With the availability of immunosuppressant treatment , the feasibility of organ transplantation has increased to a great extent. The contribution of consultation liaison psychiatrists is being required for both preoperative assessment and postoperative management. It is inferred that in the organ transplantation , the patients who are in need of psychosocial help has to be identified and treated , in order to improve the outcome as a whole.

The effects of tacrolimus and cyclosporine has to be mentioned, the drugs which are given for immunosuppression to prevent graft rejection may also elevate the risk of mood/depressive

disorders(Kemper, Spartà, Laube, Miozzari, & Neuhaus, 2003) These immunosuppressant treatment interferes with monoaminergic transmission.(Shuto et al., 1998) .Such finding have to be considered in patients taking cyclosporine for a prolonged period of time. It was under research that whether these drugs brings about changes in the neurotransmitter acting on the basic circuits of emotions in the brain.

END STAGE RENAL DISEASE AND RENAL TRANSPLANTATION

End stage renal disease is a terminally ill condition in which the renal function is lost and attained an irreversible stage to recover, making the patient permanently depend on either dialysis or transplantation. When treating ESRD patients, the realistic goal is not cure but maximizing their functioning capacity and well being.

There are differences in the prevalence of transplantation surgeries between countries. This can be explained by the changes existing in laws and the differences in utilizing donated organs efficiently. In India, the incidence and prevalence of ESRD is increasing, which is due to diabetes mellitus and hypertension. Because of difficulty in accessing renal transplantation therapy and affordability,

more than 90% of the patients with end stage renal disease die within months of being diagnosed.(Vettath et al., 2012)

In India ,the incidence of ESRD is 150/million population ,but 3.25 renal transplantations are being done per million population from live and deceased donors and the remaining population depends on maintenance haemodialysis.(Nogueira et al., 2010)

The life expectancy in India is 66.46 years on an average, which is 67.57 for females and 65.46 for males. The GDP growth rate of our country as on the year 2010 is US$1050 persons per year, which is below the poverty line.

Our government contributes 0.9% of GDP on health care facilities and the contribution from private sectors is 4.3% on an average. (Vettath et al., 2012). Inspite of being supported by the government, in some countries economic status still plays a predominant role in access to health facilities and quality of care.

Renal transplantation improves the quality of life in several domains for patients but immunosuppressant treatment which includes oral steroids and drugs like cyclosporine, tacrolimus is required for graft survival, and there comes the problem of affordability and drug adherence by the patients.

Several explanations have been proposed for the negative impact of low socioeconomic status on the self-perceived health status like differences in life style, availability of various supportive resources and presence of different stressors.

Renal transplant patients with low income are more likely to experience allograft failure than patients with adequate income after a period of 5 to 10 years, because of psychological stress and anxiety.

Several countries have performed studies to trace the various psychological factors that affect the quality of life in transplant recipients. Various inconsistencies exist in their results, but as a general

psychological factors

- fear,
- anger,
- denial of illness ;

psychosocial factors

- education,
- occupation,
- marital status ,

Clinical parameters

- duration of end stage renal disease,
- dialysis period prior to transplantation
- comorbid medical illness ,
- renal function assessed by serum creatinine value,
- glomerular filtration rate

Were found to produce significant change in the quality of life.

CLINICAL EVALUATION FOR TRANSPLANTATION:

The major limitation of renal transplantation is the availability, of donor organs, the number of wait listed patients outnumber the organ donors.

Therefore, the considerable medical, social, and financial resources necessary for successful transplantation; the responsibility of transplant recipients; and the involvement of their family and other caregivers, careful assessment of transplant candidates and their caregivers is required.

Evaluations in the pre -transplantation period typically involve two components:

1) A medical component and

2) A psychosocial assessment.

During the medical assessment, patients are evaluated and assessed whether there is a definite indication for transplantation based on UNOS criteria and to rule out significant medical co morbidities like

diabetes mellitus,

morbid obesity, or a

history of malignancy

that increases the risk for post transplant morbidity and mortality.

The mental health professional must have knowledge about their clinical team's approach to psychosocial issues and have to educate the team on the prognosis and treatment of psychiatric disorders.

Consultation- liaison psychiatrists have dual responsibility in the transplant evaluation process, satisfying both the requirements of the transplant team as well as the transplant recipient.

Simultaneously playing two roles, psychiatrists can both advocate for the transplant recipient and communicate and interpret back the transplant team's requirements to the recipient.

The details collected during the psychosocial evaluation are essential for the complete understanding of the patient by the transplant team.

The patient also receives education on renal transplant-related expectations which makes the patient to prepare themselves for the procedure and helps in early adaptation during recovery.

Thus the mental health professional facilitates the development of a long-term collaborative relationship necessary between the patient and the transplant team.

Not only addressing the transplant team's concerns and guiding the patient eligibility determinations, the pretransplant assessment can also be used to develop an individualized treatment plan to prepare the patient for transplantation and optimize post transplant outcomes.

PATIENT ADAPTATION THROUGH THE TRANSPLANT TIME COURSE

Evaluation and Waiting Period

Patients face adaptive challenges as they move on from the pre-to-post transplant course. Even the waiting period is perceived by many patients and their families as more psychologically stressful. This is more so in the case if patients are newly diagnosed to have terminal end-stage renal disease and considering the transplant surgery for the first time and decided to lead their future life as a transplant recipient.

The adjustment level of patients at the time of transplant evaluation depends on

- the seriousness of illness,
- the duration of illness (acute vs. chronic), and
- anticipation of disease (either positively or negatively)
- the organ replacement requirement.

Adapting to these new stresses can cause avoidance, denial, anxiety and depression. Candidates who are having a living donor can

choose the time of their transplant surgery can overcome the uncertainty of the wait time for surgery.

Psychoeducation for patients and families can help them in successfully crossing these transition periods and prepare them mentally for either transplantation or death.

Peri-operative Period

For patients who cross the waiting period and undergo renal transplantation successfully, the immediate peri-operative period is a time of recovery and adjustment to new challenges.

In some patients, recovery will be uncomplicated and rapid, while in other patients, it may be with multiple complications and longer.

Common postoperative complications such as

- rejection episodes,
- immunosuppressive medication side effects,
- bleeding,
- infection

may be perceived as negative set backs by the recipient, and can lead to frustration.

Managing patients during such period typically involves a

- combination of pain control,
- education,
- reassurance, and
- monitoring for early psychiatric complications.

Early Post-transplant Adaptation

The immediate postoperative period places burdens on recipients and their families and caregivers due to the complex medical regimens. In addition to the medications, patients have to attend regular reviews and get laboratory tests done frequently, since discharge.

Even while at home, patients must follow diet restrictions, restrictions on some physical activity like lifting weight, driving etc.

Transplant-Related Illness Behaviour

Maladaptive illness behavior may interfere with adaptation to the transplantation psychologically.

Recipients may have two major types of such illness behavior.

1)First, for patients who are struggling in their life for a long period with chronic disease, transplantation brings a transition from one state of illness to another, with family being expecting improvement in health status. But, some chronically ill patients got adapted to the sick role psychologically, with coping strategies that perpetuate their dependency on being sick. These patients may have difficulty on transitioning into a healthier state. They may feel that the clinical team is urging them to get fast recovery. Such patients may develop unexplained somatic complaints, like chronic pain, or have non-adherence to post transplant medications.

2)The second type of maladaptive behavior is observed in patients who become acutely ill and undergo emergency renal transplantation. For such individuals, transplant may be an unwelcomed event. Awareness of their need for a donor organ would not have occurred until the peri-operative period. These patients may have difficulty accepting or denying their medical illness and post transplantation changes in life. They may attempt for faster recovery pushing them for that. They may have resent in receiving a transplant and may act out their anger or denial in episodes of non-adherence.

Long-Term Outcomes

Most renal transplant recipients are in need of a multiyear period for them to achieve maximal functioning of the transplanted organ, which happens after a low level of post operative complications and infrequent episodes of organ rejection. Their near normal health status during this period contributes to improved emotional well-being.

With time, however, other problems with the transplanted kidney may develop (e.g., chronic graft rejection) and patients are also at risk of complications of long-term immunosuppressive medication including diabetes, hypertension, and cancers.

Overall transplantation extends life of ESRD patients and improves their health and quality of life compared to pre transplant dialysis period, but to the level of a normal healthy person.

PSYCHIATRIC MORBIDITY IN ESRD PATIENTS:

Various studies have been conducted to assess the psychiatric morbidity in hemodialysis patients and also renal transplantation patients, few with comparison between them. Technological

advancement have produced longer survival rate after renal transplantation, which shifted the attention of the medical professionals towards the morbidities in the renal transplantation patients during the post operative period.

The patients under going maintenance hemodialysis for longer periods , which makes them more dependent on medical ailment and care givers are found to have more psychiatric morbidity like depression.

Though it was expected that transplantation would provide some relief from this painful dialysis procedures and make them less dependent ,and free from like anxiety, depression etc., in reality it was not so. The existence of psychiatric disorders like depression and anxiety are severe even in the post transplant period.

Several etiologies have been described for the psychiatric morbidity in the renal transplant recipients like

- physiological changes associated with organ insufficiency,complex procedures involved in the transplantation surgeries,
- breach in the integrity of body structure and function ,
- problem of getting a suitable organ donor,
- fear of new organ being rejected after transplantation,

- financial issues ,
- need for the dependence on life long immunosuppressant medications., and
- accompanying psychological distress.

PSYCHIATRY AND TREATMENT ADHERENCE:

Drug adherence to immunosuppressant medication in the post transplantation period is now emerging as a big problem. There are studies which report that at least 20% of all renal transplant recipients are not adhering to their proper treatment schedule with medications and this non-adherence is a major cause of transplant rejection and premature transplant failure (Butler, 2002). Psychiatric intervention is needed in this area which causes great impact in management and graft survival.

Noncompliance due to medical causes such as poor tolerance is also important. It is calculated that about 25% of patients who are under treatment with immunosuppressive drugs are noncompliant and they may act as confounding factor in interpreting results of these studies negatively. Patient's quality of life in the post transpslantation period is affected to a great extent by this poor drug compliance and it

also detrimental to society. (Jindel, Joseph, Morris, Santella, & Baines, 2003) .

Therefore anxiety and depression has to be assessed as a part of routine medical examination after every kidney transplantation. The high risk factors of noncompliance after kidney transplants so far studied are younger age group, female gender, unmarried persons, and non-Caucasians. Patients with a history of previous transplant long time before and those who are recipients of living donors are also found to be noncompliant.

Psychosocial assessment must be included in the Pre-transplant screening procedure using one or more of the standardized instruments and those patients who are at high risk regarding noncompliance to drugs in posttransplant period has to be identified and given extra care and vigil. It is desirable to provide counseling to all renal transplants recipients if possible.

Focus shold be directed towards patients who are high risk of noncompliance ,which is a good cost-effective measure. This effort will definitely reduce the number of kidney transplants which are being lost due to noncompliance of drugs and it may even benefit the society in economic aspect.(Matas et al., 2002)

DEPRESSION:

Depression ranks fourth among the disabling disease worldwide. It is the most common psychiatric morbidity among patients with end stage renal disease. Among end-stage renal disease (ESRD) patients, the frequency of depression was found to be 25% to 30% , specifically after the initiation of renal replacement therapy(Sezer, Mic, & Akman, 2003).Psychosocial problems are related to the physical illness in these patients.

Depression is somewhat difficult to diagnose in patients who are in terminal medical illness.

The somatic symptoms of depression include

- weight loss,
- anorexia,
- lack of energy,
- sleep disturbance, and
- retardation in psychomotor activity,

may be presenting clinical feature of the physical illness.

Whatever may be the cause the psychiatric diagnosis should be made applying the diagnostic criteria, but the psychiatrist must be aware of the possibility of overdiagnosis in such patients.

To prevent such mishappening, the cognitive symptom of depression has to be focused more during the assessment. The diagnosis of major depression is however supported by somatic symptoms if severity of those symptoms are more, disproportionate to the physical illness and can be correlated temporarily with the onset of symptoms of depression.

Patients with physical illness with co-morbid depression have poorer levels of functioning and higher levels of morbidity and mortality compared with patients with physical illnesses without depression.(Wulsin, Vaillant, & Wells, 1999)

Among the renal disease patients; depression is more noticed among young transplant recipients and female patients. Younger recipients who has lost their previous full functioning capacity and who has to follow new limitations in their daily life that is unmodifiable in their future are at high risk of depression.

The social support in chronically ill females is lower than that of males as observed in previous studies, making them more prone for depression. It is quiet obvious factor that patients who have to wait for a longer time to receive a suitable cadaveric donor are at more risk for anxiety and depressive disorders, when compared to patients who are waiting for the transplant procedure with available live donor.

In married patients with satisfactory marital relationship , depression is less common since they could share their psychological distress and get good support .(Sezer et al., 2003)

Some of the predictable factors for depression in renal transplant recipients are those patients who are living alone, without a regular income, having a rejection episode, and those who dislike organ transplantation.(Tsunoda, Yamashita, Kojima, & Takahara, 2010)

Paradoxical Depression:

Most of the renal transplant recipients will be having a better feeling after a renal transplantation as if they have got a new life and regained the lost renal function, so as to lead a normal life in their remaining future. Yet in few patients even after successful transplantation, depression develop .

Paradoxical depression is depression occurring in recipient after a successful renal transplantation without any rejection or other surgical and medical postoperative complications.(Sugawara et al., 2008)

The term “paradoxical depression” is often applied to patients who have undergone successful transplantations with depressive

symptoms related to “burden relief” once the need for long-time dialysis has been eliminated. Fukunishi et al,defined the diagnostic criteria for PPS, Paradoxical Psychiatric Syndrome ,reporting that PPS was frequently observed among adult recipients, especially those who underwent living-related transplantation.(Fukunishi et al., 2001)

The severity of depressive symptoms is found to be higher among those with lower educational status.(Karaminia et al., 2007) some other established risk factors are

- being unmarried or unsatisfactory marital life,
- poor family support,
- comorbid medical conditions and
- major stressful life.

Depression following renal transplantation is a serious condition since it not only leads to poorer quality of life, but also poor drug compliance which is equivalent to suicide in such patients as this causes graft rejection and life threatening consequences.

There is increase in the number of renal transplantation and because of medical complexities; often depression is unlikely to be noticed. So to determine which patient requires specialized mental

health treatment, systematic screening and periodic reassessment has to be carried out in all the renal transplant recipients.

Relationship Between Depression And Physical Illness:

The most common mode of the physical illness leading to the depressive illness is because of a direct biological mechanism, this is more so if the endocrine or central nervous systems are involved.

The physical condition may also generate depression through a psychological reaction, especially if the condition is disabling or fatal. In general, two-thirds of depression patients in general hospital is because of some physical illness, or its management.

Second, the physical problems may exacerbate due to depressive illness. Depression leads to other changes in health-related behaviours, like poor compliance with medications, diet, exercise and health care services utility.

Third, the depressive and physical illnesses may have a common etiology, for example grief or stress may be the factor triggering the stroke and the depression.

Finally, the depressive illness may be unrelated to medical conditions, and may be just a co-incidental finding.

Depression also influence life style behaviours like physical activity in a negative way, which further adds on to the adverse consequences of low physical activity which is already present in the renal transplant therapy.

Not only that, depressive symptoms like feelings of hopelessness and difficulty in concentration, memory disturbances will result in behaviours including forgetting pills or missing follow up appointments.(DiMatteo, Lepper, & Croghan, 2000)

There is also an increased risk of suicide among depression patients with chronic physical illness and pain. Elderly people in this category may even deny their suicidal ideation but the risk of suicide is high in them.

ANXIETY:

In transplant recipients, the factors influencing the severity of anxiety are

a. A history of graft rejection
b. Age < 35 years during transplantation

This can be explained from a psychodynamic point of view that people with a high level of anxiety undergoing transplantation are

probably more hypersensitive and tend to reject the transplant. That is, they worry more over trivial issues that a normal person would give no importance. Especially, this state of mind can cause excessive agony (for example, about the possibility of suffering a rejection, of suffering an infection), which harms the psychological and physical state of the patient in the long run. (Dew et al., 2001)

Features of anxiety can result in poor adherence to medications, that is, as a result of their own psychological state they tend to ignore healthy habits, which partly accounts for the occurrence of a poor quality of life of the transplant patients in the post discharge period of one year.(Dew et al., 2000)

There are four fundamental affected areas: (Mart, 2006)

(1) Psychological area:

These may manifest as anxiety symptoms or as depressive symptoms.

- Features of anxiety may be evident as
- “feel uptight,”
- “feel tense or annoyed,”
- “have a sense of fear, like something terrible might happen,”
- “have their head full of worries,”

- “feel restless, like they cannot keep still,” and
- “suddenly feel panic.”

Features of depression may present as

- “feel depressed,”
- “do not feel happy,” and
- “do not feel optimistic with respect to their future well-being”;

(2) Social area:

Their physical state and treatment “have a negative influence on their family life and social activities”

(3) Physical area:

- They usually suffer from various gastrointestinal disturbances (for example, “constipation” , diarrhea, upset stomach);
- Cardiovascular symptoms like palpitations, chest pain etc
- Respiratory symptoms like dysnoea, difficulty in breathing etc
- Neurological symptoms like tremors ,syncope etc

- And various autonomic symptoms like sweating,, dry mouth etc

(4) Economic area:

The symptoms of anxiety also have a negative impact on the persons financial status.

QUALITY OF LIFE:

Quality of life is now becoming an vital concept in the assessment of various therapeutic aspects in patients with unremitting illness. The medical care has shifted its objective toward quality of life rather than survival rates and mortality rates as its key indicators of a therapeutic efficacy. In the field of kidney transplantation the quality of life is now gaining importance as the patients are now having good surgical outcome and better longevity.

The quality of life assessment, unlike other regular medical investigations requires the patient to assess his or her own physical and mental health by estimating their social situations and other economic aspects into consideration. However, the inconsistency of instruments and the absence of a clear definition poses various

practical difficulties in the assessment of the Quality of life. (Overbeck et al., 2005) .

The Quality of Life assessment has been linked to clinical outcome in many studies. It has also been reported that the traditional philosophy and various religious beliefs existing in our country may also act as a coping mechanism and improve the quality of life in many domains in our patients.

AIM AND OBJECTIVES

AIM

The aim of this study is to study the prevalence of anxiety and depression, its clinical correlates and to assess the quality of life (QOL) among renal transplant recipients.

OBJECTIVES:

- To detect the psychiatric co-morbidity like anxiety, depression and it clinical correlates among renal transplant recipients.

- To assess the quality of life in the post transplantation period of ESRD patients.

MATERIALS AND METHODS

- Sample:*50 renal transplantation recipient patients (Random Sampling) attending the outpatient department, Department of Nephrology, Rajiv Gandhi Government General Hospital, Chennai.

  *50 normal healthy subjects from general population.

STUDY DESIGN

Case control study.

Cross sectional study.

MATERIALS USED

A. Semi structured proforma to elicit socio economic and other information – past history, family history, personal history, premorbid personality details and clinical history.

B. MMSE

C. Hamilton Anxiety Rating Scale (HAM-A)

D. Hamilton Depression Rating Scale (HAM-D)

E. MINI Plus

F. WHOQOL-BREF Questionnairre

CASES: 50 renal transplant recipient patients attending the out patient department, Department of Nephrology, Rajiv Gandhi Government General Hospital, Chennai.

INCLUSION CRITERIA

- Male and female patients attending the outpatient department, Department of Nephrology, Rajiv Gandhi Government General Hospital, Chennai.
- Participants between 18-60 years of age
- Willing to provide informed consent for the interview.

EXCLUSION CRITERIA

- Patients with known psychiatric illness before.
- Patient is <18 and >60 years of age
- Patients in a state of delirium
- Un-cooperative patients
- Refusal to provide informed consent.

CONTROLS: Age and gender matched 50 normal healthy subjects from general population.

INCLUSION CRITERIA:

- Participants between 18-60 years of age.
- Normal healthy subjects from general population
- Willing to provide informed consent for the interview.

EXCLUSION CRITERIA

- Patients with known psychiatric illness
- Patients with chronic medical illness like End stage renal disease, decompensatory liver disease, Tuberclosis, Leprosy, Bronchial asthma, Stroke, Cancer, Ischemic Heart disease etc.
- Patient is <18 and >60 years of age
- Refusal to provide informed consent for assessment

HAM-D

It is one of the most widely used and accepted scale to evaluate depression symptoms and its severity. It is designed to be administered by a trained health professional using a semi-structured interview. Though Hamilton has not provided any specific guidelines regarding the administration and scoring of the scale nor any standardized question for eliciting information from the patients, high inter-rater reliability has been observed using this scale. Several versions of HAM-D are available at present. The current version of HAM-D lists 21 items of which one the first 17 are scored. The remaining provides additional clinical information.

Eight items are scored on a 5 point scale ranging from 0 – not present to 4 – severe. Nine items are scored on a 3 point scale from 0 to 2. Sum of the first 17 items is calculated as the total score.

- Normal – 0 to 7
- Mild - 8 to 13
- Moderate – 14 to 18
- Severe – 19 to 22
- Very Severe – > = 23

HAM-A

This is another scale which is used to evaluate anxiety symptoms in the patient.

It has got 14 items the interviewer rates the individual on a five point scale for each of the 14 items.

Seven of the items specifically address psychic anxiety and the remaining seven items deal with somatic anxiety.

The total score ranges from 0 to 56.

- Normal – 0 to 13
- Mild – 14 to 17
- Moderate – 18 to 24
- Severe – 25 & above.

WHOQOL – BREF Questionnaire

It is a generic health related questionnaire developed by the WHO QOL group - which helps to quantify the health related quality of life.

It consists of 24 facets and it provides profile of scores on four dimensions of quality of life.

The four domains are

1) Physical Domain
2) Psychological Domain
3) Social Domain
4) Environmental Domain

After calculating the total of each domain the raw scores are converted in to transformed scores using the tables. The First transformation converts raw domain scores to a range of 4 to 20 and the second transformation converts it to a 0 to 100 scale. Higher scores are obtained with a better quality of life.

Mini-Mental State Examination (MMSE)

It is a thirty point questionnaire by Folstein .

It is used to assess

- cognition,
- orientation to time and place,
- memory,
- language use including comprehension/word repetition/reading/writing/drawing, attention, and arithmetic ability.

Any score more than 27 out of 30 is considered normal. In the study, MMSE is used to screen the patients and assess if there is any cognitive impairment in them.

MINI – PLUS

It is **Mini International Neuropsychiatric Interview.** It was designed to diagnose the axis one psychiatric disorders in DSM IV and ICD 10. It is a structured interview which is brief used by clinicians after giving instructions and training the patients in a short session. It has got good validity and reliability scores.

It is important in part of the clinician to make sure that the patient should give importance to each dimension of the questions in the interview. The symptoms due to organicity or substance use are given space to be coded separately which is in contrast to MINI. The general format is divided into modules and identified by letters that are corresponding to a particular category.

The assessment tool is divided into modules each representing a major psychiatric diagnosis and the main questions eliciting responses to meet the diagnostic criteria of a disorder are given in gray boxes.

TYPE OF STUDY

Case control study

PERIOD OF STUDY

May 2012 to November 2012

PLACE

Rajiv Gandhi Government General Hospital,

Chennai.

METHODOLOGY:

The study was conducted between May 2012 and November 2012. 50 transplant recipients and 50 control subjects who were matched for age and gender participated. All participants were living independently in the community. There was no difference between the two groups in age and gender proportion and on the scores of MMSE.

In view of the high incidence of cerebro-vascular disease in renal transplant recipients cognition was assessed to exclude any deficit. All Participants were then screened for absence of any psychiatric disease. It was ensured that the controls were healthy and were not suffering from renal disease. The presence study also deliberately excluded those transplant recipients who had undergone transplant procedure less than or equal to six months. This is to avoid the risk of anxiety connected with the major surgical procedure and possible acute rejection.

In the present study patients attending the review OP of nephrology department were studied. In the post operative period after discharge patients were supposed to attend the nephrology department

every 15 days for clinical and biochemical evaluation and also getting their regular medication.

Surprisingly almost all the patients who were studied were observed with good drug compliance as evaluated through the self reported questionnaire and corroborated with their review records which were properly maintained by the Department, even though the serum creatinine value was not found under control for majority of the transplant recipients.

Demographic information like

1. age,
2. sex,
3. education,
4. occupation,
5. income,
6. maritial status ,
7. family type,
8. area of residence

were collected from the patients.

This study had included patients with age group 18 to 60 years, however the 50 taken were classified into five age groups such as

1) 18 to 24,
2) 25 to 35,
3) 36 to 45,
4) 46 to 55
5) more than 55

since it would easier to get matched with the respective groups among controls and exact age matching was not possible practically.

The education status was recorded in five groups

1. uneducated,
2. schooling & SSC,
3. HSC,
4. Graduate
5. Post – graduate.

The occupation statuses were divided into four groups as unemployed, unskilled, skilled and professional.

The income was recorded in four groups, according to Kuppusamy classification, It is recently revised to seven groups such as

I. less than 1520,
II. 1521 to 4555,
III. 4556 to 7593,
IV. 7594 to 11361,
V. 11362 to 15187 ,
VI. 15188 to 30374 and
VII. more than 30374.

The Medical history details collected to correlate clinical parameters with depression and anxiety were as follows

1) Cumulative end stage renal disease (ESRD) , it is the time period since the initiation of the first treatment from ESRD in months hence recorded

2) The no of co morbid condition & it is recorded in 3 groups such as nil,
   1 or 2 conditions, and
   more than 3 conditions.

3) The time on analysis before the transplant is calculated in months was obtained from the patients.

4) Transplant vintage period that is the time elapsed since the time of transplant surgery ,was recorded

5) Type of donor whether
   living or
   dead

6) The number of rejection episodes classified in to three groups ie)
   no rejection group/
   one or two rejection group/
   more than three rejection group

7) Complication of post operative medication like steroids and immuno suppressions if any was recorded in two groups ie)
   nil or
   present

8) The drug compliance was registered as either

good or

poor

from self reported corroborated with records maintained by the department

9) The history of inter-current infection is classified either as

nil or

present.

10) The last serum creatinine value was collected from the lab records maintained.

The study was approved by the ethical committee of Madras Medical College in the month of Aug 2012.

Before enrolling the patients in the study, detailed verbal and written information was given to the patient regarding the aim and protocol of the study and a signed inform consent was obtained.

Statistical Analysis

The statistical analysis was carried out using SPSS-20 soft ware. The collected Datas were summarized using proportion, number, percentage,mean , standard deviation, whichever was found to be Appropriate for the particular data .

Independent student T test was applied to compare continuous variable and chi square test was applied to compare categorical variables. In all statistics analysis, 2-sided tests were used for the appropriate datas and results were considered statistically significant if P value is less than 0.05

RESULTS

The results of the socio demographic profile including age, sex, education, occupation, income, marital status, religion, area, family type was tabulated in Table 1 and Table 2. Chi square test was applied to compare the proportion between cases and controls.

As taken for study both the groups are matched for age and gender, but there was significant difference between the cases and controls regarding education and occupation. 7% of the studied cases and 15% of the controls were uneducated. In the studied cases 16% were Post Graduates where as only the 2% of the controls were post graduates. And there was not much difference in other categories of education among cases and controls. Regarding occupation 40% of the cases are unemployed where as only 20% were unemployed. With respect to area of residence, while the majority of controls were from urban area, the cases were equally distributed that is 50% from urban and 50% from rural areas. The cases living in joint family set up is 30% which is high compared to 6% in controls. There was no significant difference in other socio demographic parameters.

Chi-Square test to compare the proportions between Cases and Controls

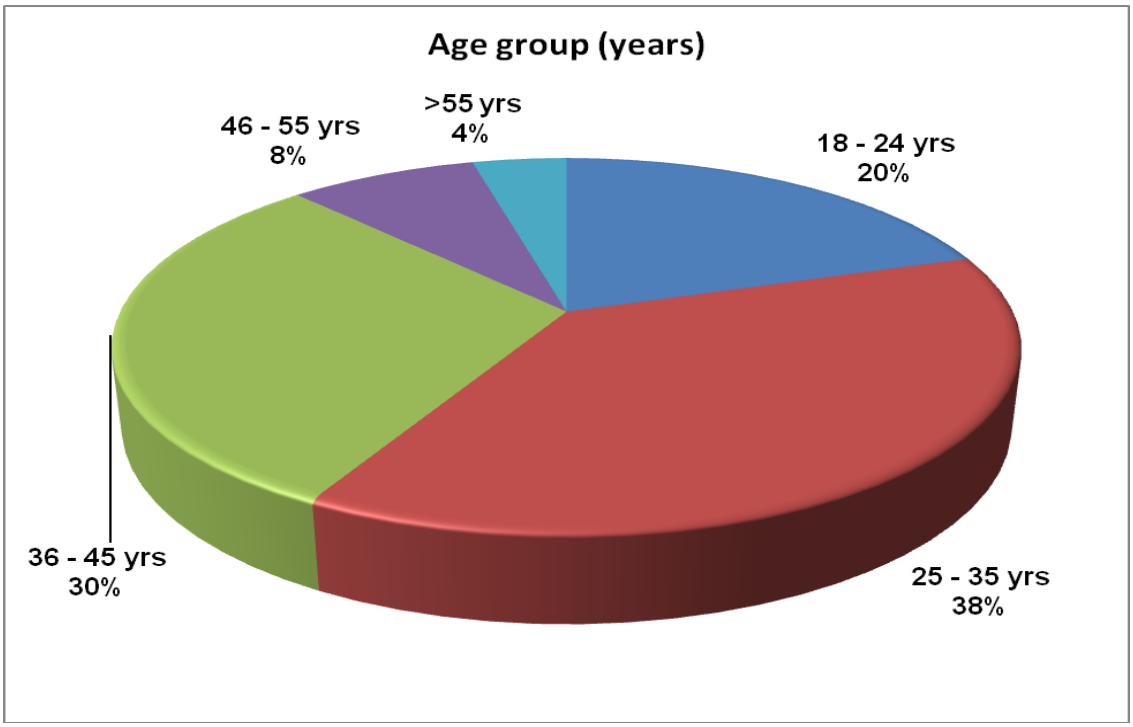
Table No:1

Variables		Group				Total		P-Value
		Cases		Controls				
		N	%	N	%	N	%	
Age	18 - 24	10	20.0	10	20.0	20	20.0	-
	25 - 35	19	38.0	19	38.0	38	38.0	
	36 - 45	15	30.0	15	30.0	30	30.0	
	46 - 55	4	8.0	4	8.0	8	8.0	
	>55	2	4.0	2	4.0	4	4.0	
Sex	Male	39	78.0	39	78.0	78	78.0	
	Female	11	22.0	11	22.0	22	22.0	
Education	Uneducated	7	14.0	15	30.0	22	22.0	0.035
	School/SSLC	15	30.0	20	40.0	35	35.0	
	HSC	15	30.0	10	20.0	25	25.0	
	Graduate	5	10.0	4	8.0	9	9.0	
	Postgraduate	8	16.0	1	2.0	9	9.0	
Occupation	Unemployed	20	40.0	10	20.0	30	30.0	0.004
	Un-skilled	15	30.0	29	58.0	44	44.0	
	Skilled	15	30.0	8	16.0	23	23.0	
	Professional	0	.0	3	6.0	3	3.0	
Total		50	100.0	50	100.0	100	100.0	

Table No - 2

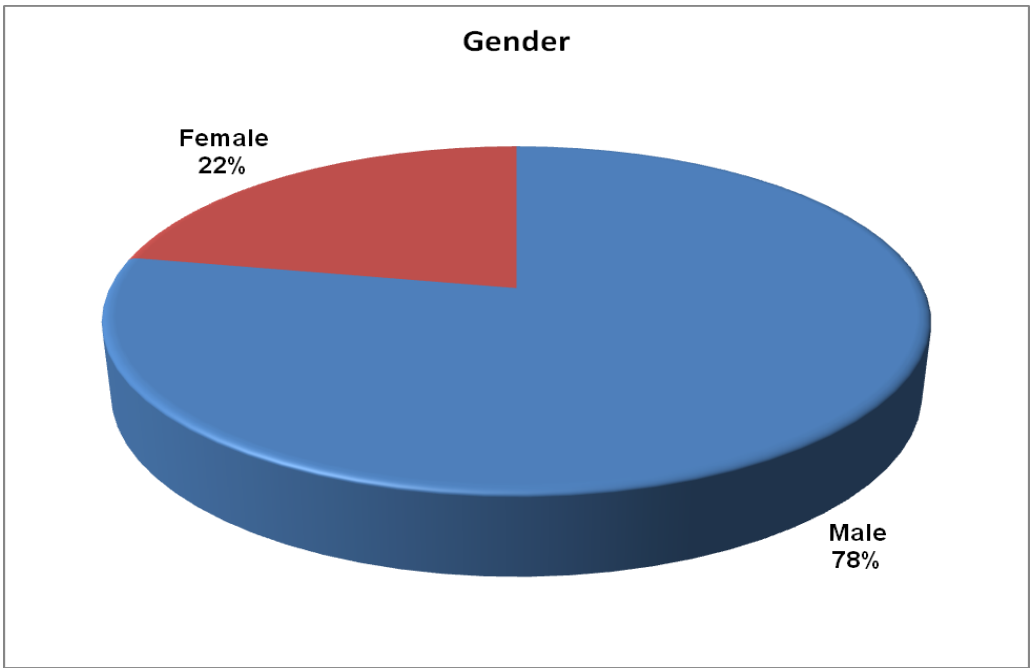
Variables		Group				Total		P-Value
		Cases		Controls				
		N	%	N	%	N	%	
Income	< 1520	13	26.0	10	20.0	23	23.0	0.894
	1521 - 4555	18	36.0	19	38.0	37	37.0	
	4556 - 7593	9	18.0	11	22.0	20	20.0	
	7594 - 11361	4	8.0	3	6.0	7	7.0	
	11362 - 15187	1	2.0	5	10.0	6	6.0	
	15188 - 30574	4	8.0	1	2.0	5	5.0	
	> 30574	1	2.0	1	2.0	2	2.0	
Marital status	Unmarried	13	26.0	19	38.0	32	32.0	0.284
	Married	36	72.0	31	62.0	67	67.0	
	Divorced	1	2.0	0	.0	1	1.0	
Religion	Hindu	41	82.0	40	80.0	81	81.0	0.866
	Muslim	4	8.0	6	12.0	10	10.0	
	Christian	5	10.0	4	8.0	9	9.0	
Area	Urban	25	50.0	39	78.0	64	64.0	0.004
	Rural	25	50.0	11	22.0	36	36.0	
Family type	Nuclear	35	70.0	47	94.0	82	82.0	0.002
	Joint	15	30.0	3	6.0	18	18.0	
Total		50	100.0	50	100.0	100	100.0	

Chart No - 1



This is a pie chart depicting the percentage of age group among the renal transplant recipients.Age group from 18 to 60 years were included in the study. Among cases majority of them were in the younger age group. Of that 38% were in the age group of 25 to 35 years.

Chart No - 2



This is a pie chart depicting the percentage distribution of gender among the transplant recipient group. Nearly three fourth of patients were males in the present study.

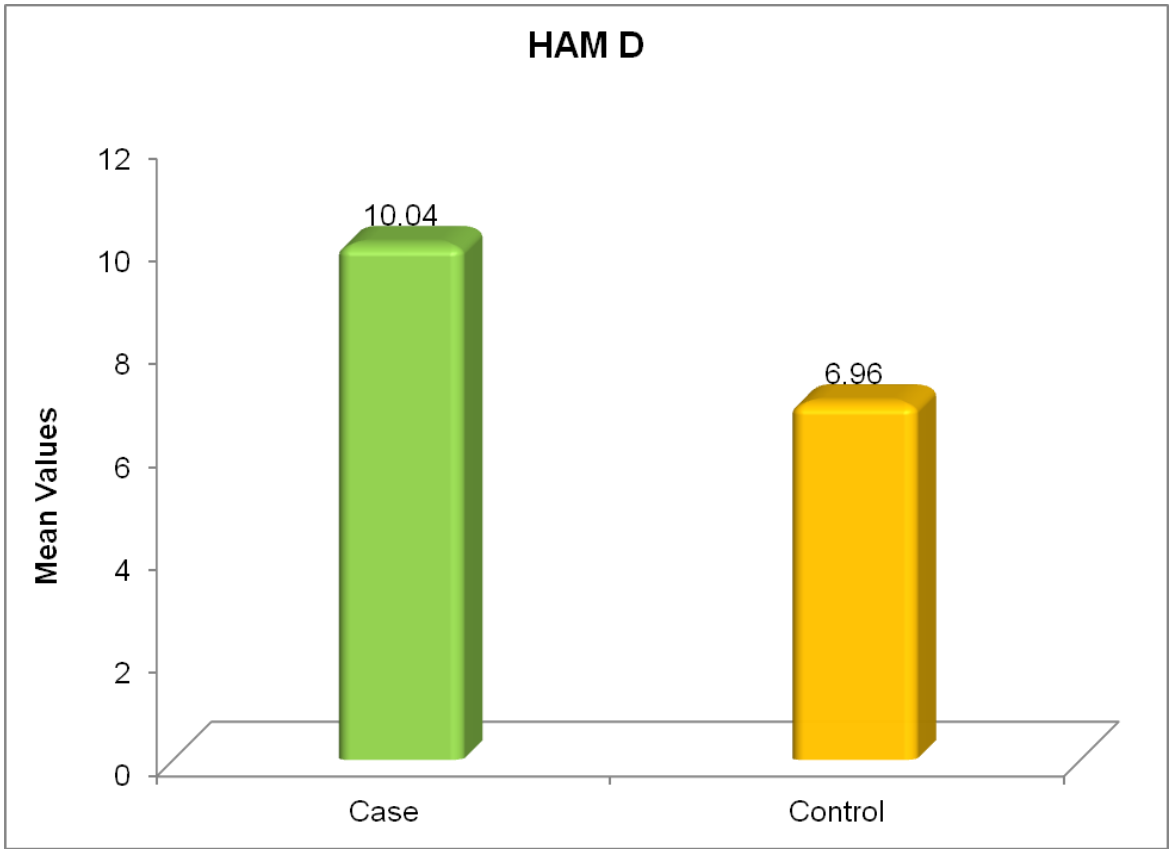
Independent samples T-Test to compare the mean values between Cases and Controls

Table no 3

Variables	Group	N	Mean	Std. Deviation	P-Value
MMSE	Cases	50	28.600	0.857	0.714
	Controls	50	28.660	0.772	
HAM D	Cases	50	10.040	4.729	<0.001
	Controls	50	6.960	2.990	
HAM A	Cases	50	9.260	3.367	0.004
	Controls	50	7.540	2.451	
TD 2	Cases	50	58.080	13.083	0.555
	Controls	50	59.480	10.432	
TD 3	Cases	50	54.900	12.006	0.224
	Controls	50	57.680	10.668	
TD 4	Cases	50	51.320	17.356	0.017
	Controls	50	59.320	15.516	
TD 1	Cases	50	54.900	14.558	0.426
	Controls	50	57.040	12.066	

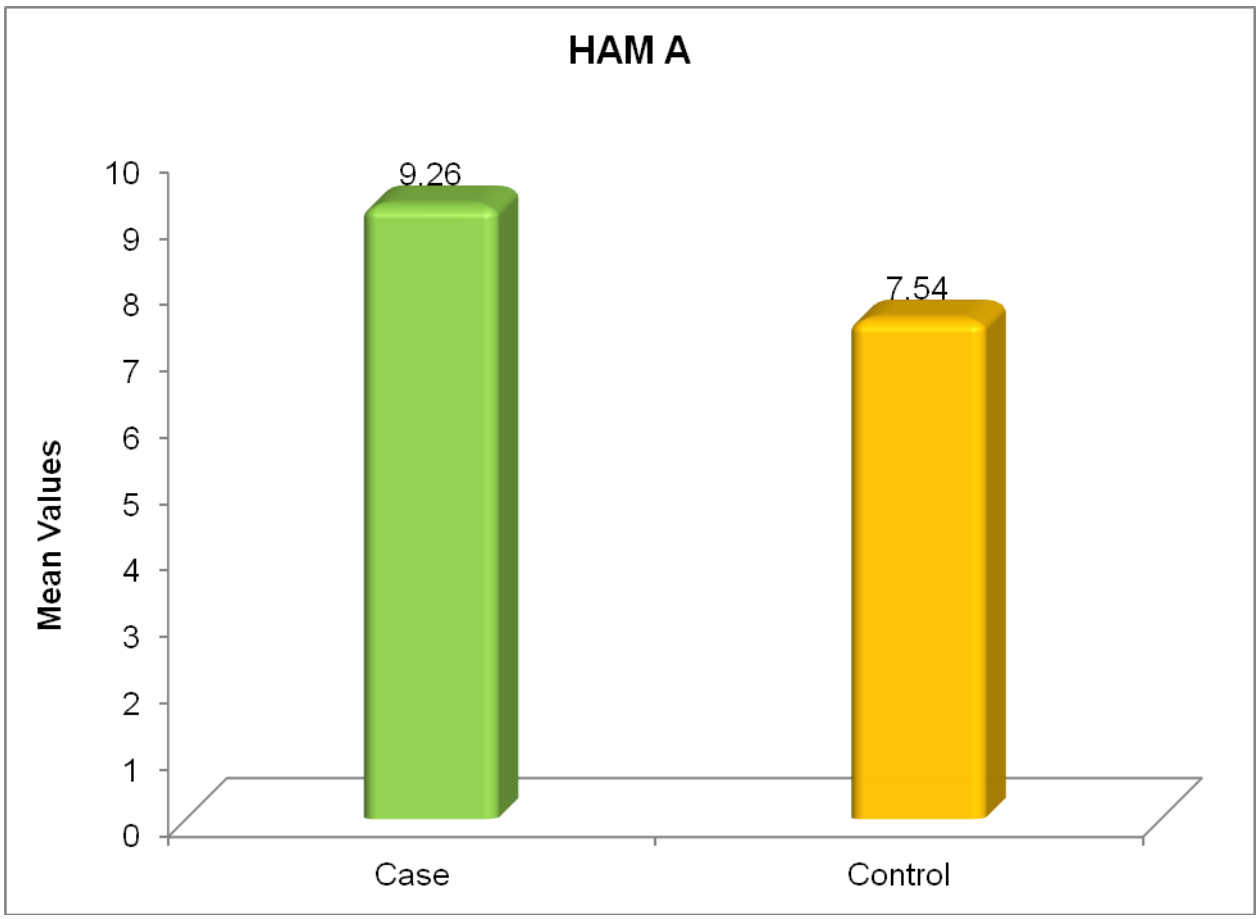
On applying independent sample T Test to compare the mean values between the cases and controls there was a significant difference in HAM-D score ($p < 0.001$) and HAM-A score ($p = 0.004$) which found in Table No - 3. Also there is significant difference in the p value in the environmental domain of the quality of life when compared between cases and controls

Chart No - 3



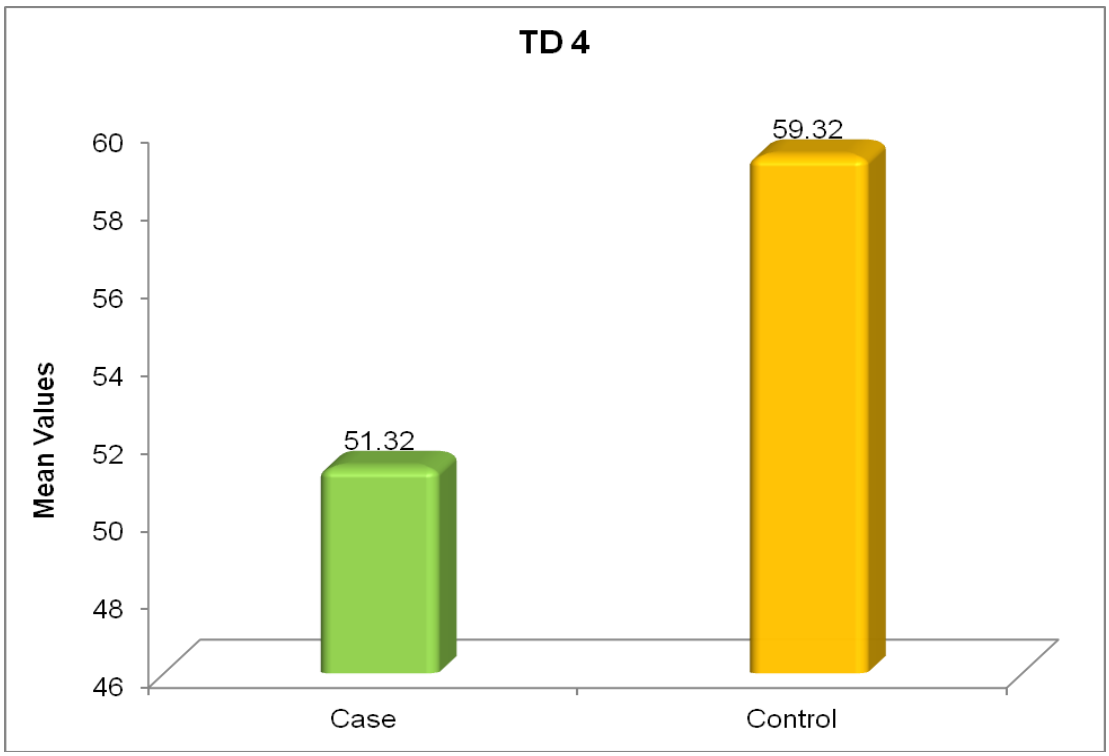
The above chart clearly depicts the significant difference in the mean values of HAM – D scores between the renal transplant recipients and normal healthy subjects.

Chart No - 4



This chart visualizes the significant difference in mean values of HAM-A Scores between the transplant patients and the control group, which is less than that of depressive scores.

Chart No - 5



This chart clearly depicts the significant difference in the mean values of cases and controls in the environmental domain of quality of life(TD 4), as assessed by WHO QOL –BREF Questionnaire.

Statistics for cases alone

Mean values

Table No: - 4

Variables	N	Mean	Std. Deviation
Cumulative ESRD	50	51.200	29.609
Time on dialysis before transplant (months)	50	13.020	20.462
Transplant vintage	50	26.520	19.732
Creatinine	50	1.402	0.504

The mean and standard deviation of some of the clinical correlates studied like cumulative ESRD and time on dialysis before transplant, transplant vintage period were tabulated in Table 4. The mean value for cumulative ESRD is 51 months and on an average 13 months nearly one year was spent on dialysis before transplantation. The mean value for the transplant vintage period is 26 months which is nearly two years. The mean creatinine value was found to be 1.4.

Table No: - 5

Variables		Frequency	
		N	%
Co morbid conditions	Nil	45	90.0
	1 or 2	5	10.0
Type of donor	Living	39	78.0
	Cadaver	11	22.0
No. of rejection episodes	Nil	40	80.0
	1 or 2	10	20.0
Complication of post op medications	Absent	22	44.0
	Present	28	56.0
Drug compliance	Good	49	98.0
	Poor	1	2.0
History of inter current infection	Absent	34	68.0
	Present	16	32.0
Total		50	100.0

In Table - 5 the study showed in 90% of patients there was no pro morbid conditions and in 80% of transplant recipients there was not history of any rejection episode. In more than 3/4th of the transplant procedures were living donors. It was also noted that though 56% of patients had complications due to post operative medications, surprisingly their drug compliance was very good as 98%. There was history of inter current infection in 32% of the renal transplant recipients.

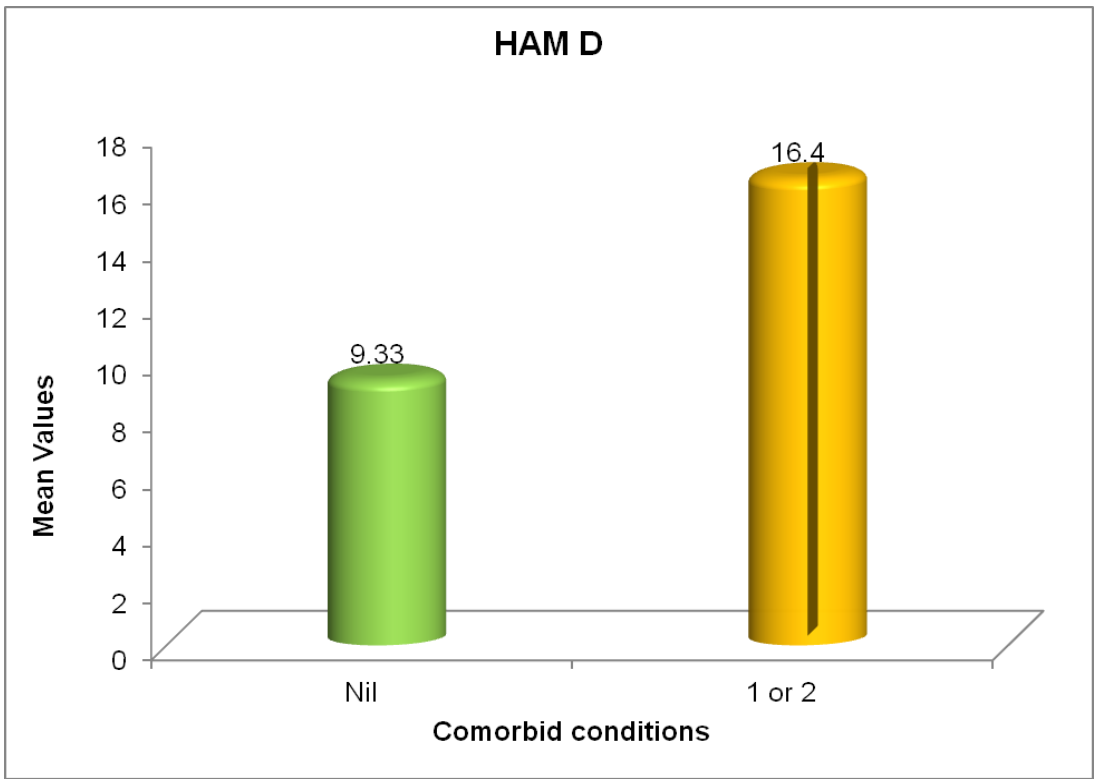
Independent samples t-test to compare the mean values between comorbid conditions

Table No – 6

Clinical features	Co morbid conditions	N	Mean	Std. Deviation	P-Value
HAM D	Nil	45	9.33	4.333	0.001
	1 or 2	5	16.40	3.362	
HAM A	Nil	45	9.33	3.490	0.649
	1 or 2	5	8.60	2.074	
TD 2	Nil	45	59.82	11.886	0.004
	1 or 2	5	42.40	14.188	
TD 3	Nil	45	56.40	11.151	0.007
	1 or 2	5	41.40	12.033	
TD 4	Nil	45	52.58	16.858	0.125
	1 or 2	5	40.00	19.647	
TD 1	Nil	45	56.27	13.885	0.045
	1 or 2	5	42.60	16.288	

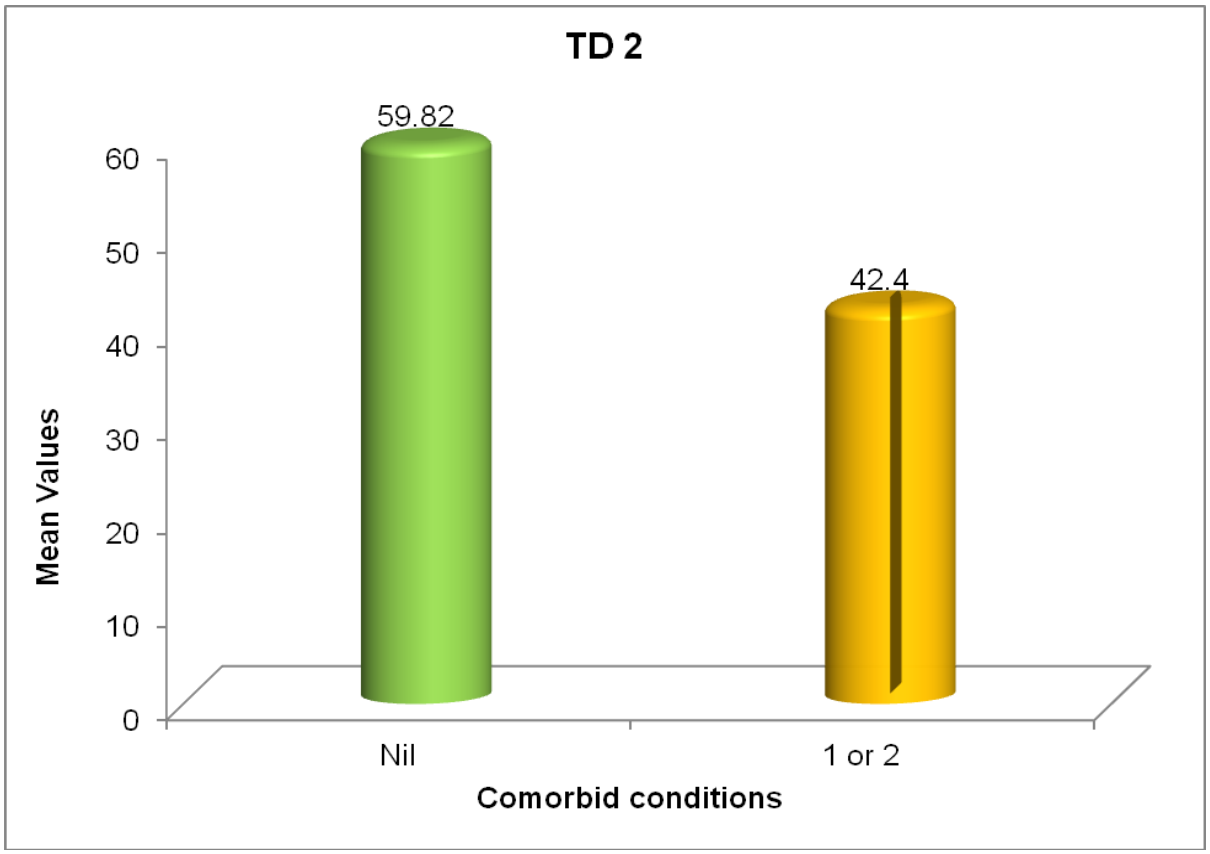
In Table 6 – The independent sample t test was used to compare the mean values between the co morbid conditions. The P value (p is equal to 0.001) was significant in HAM-D and physical psychological & social domain of quality of life.

Chart No – 6



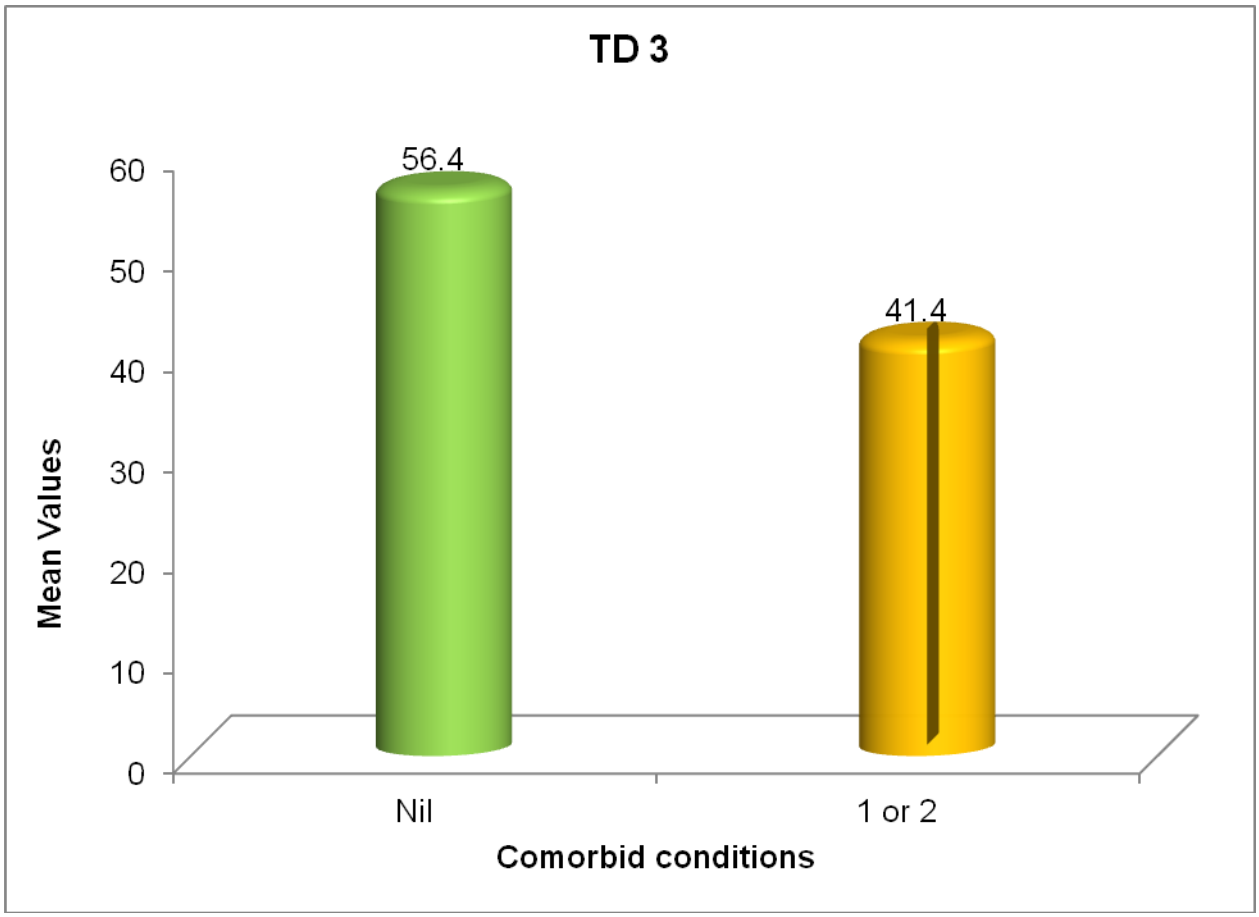
This bar chart clearly shows the significant difference in mean values of HAM –D scores with presence of comorbid conditions.

Chart No - 7



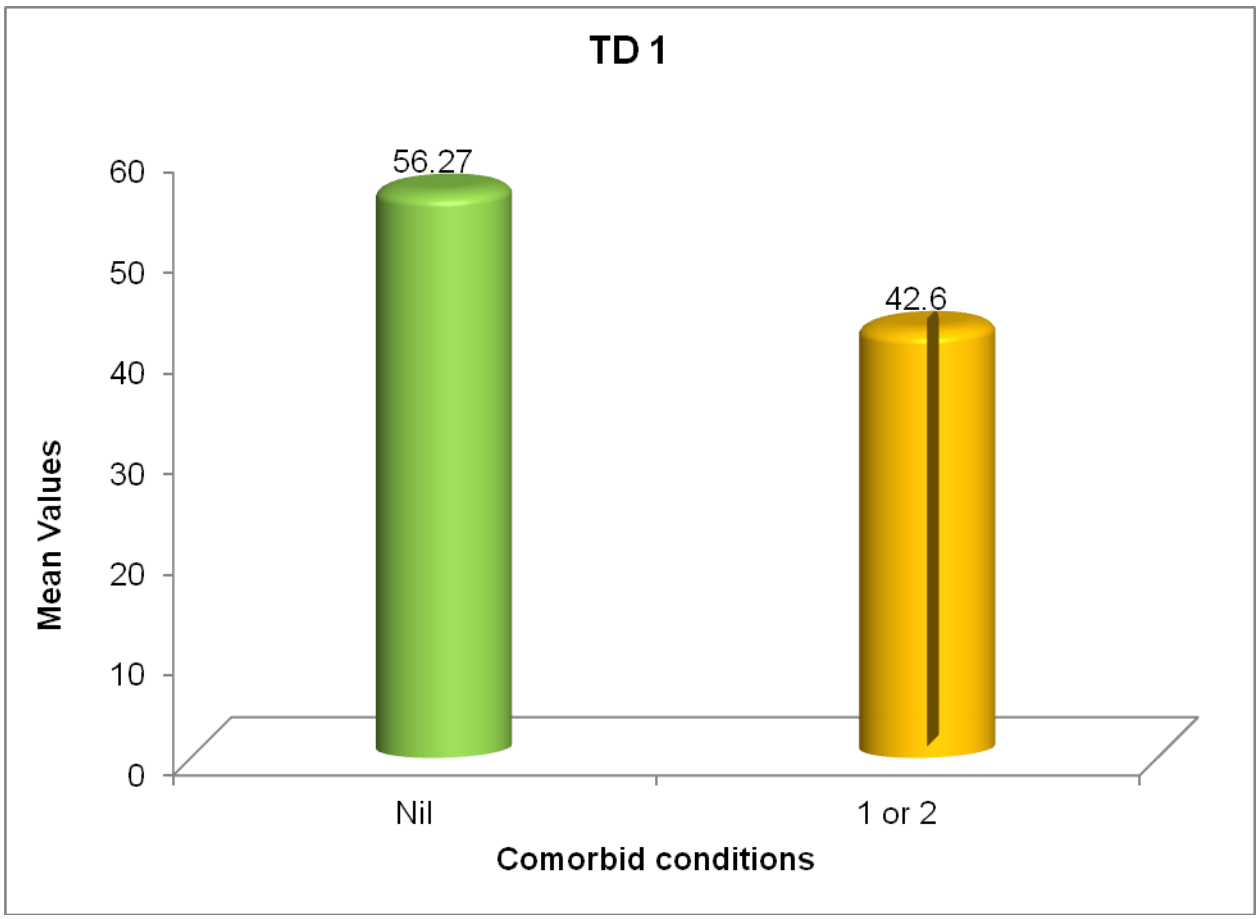
This chart depicts the difference in mean values of psychological domain of quality of life with presence of comorbid conditions

Chart No – 8



This chart depicts the difference in mean values of environmental domain of quality of life with presence of comorbid conditions

Chart No - 9



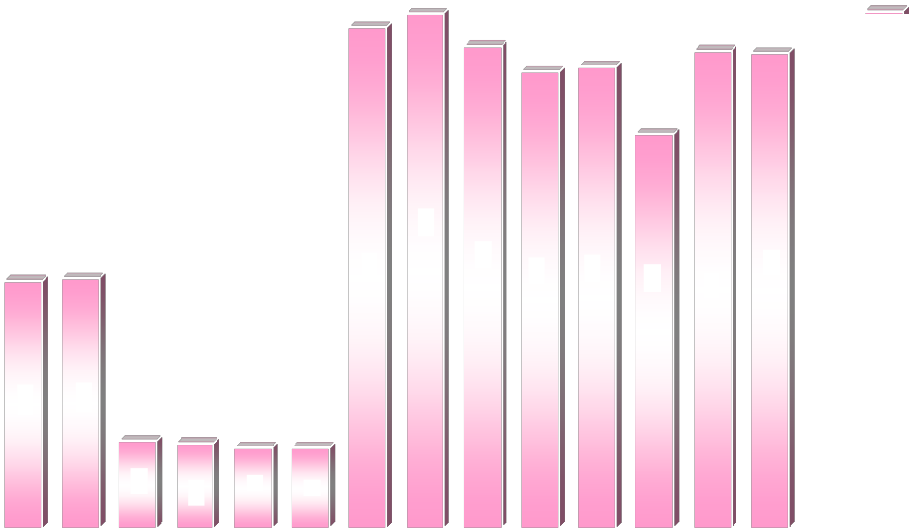
This chart depicts the difference in mean values of physical domain of quality of life with presence of comorbid conditions

Independent samples t-test to compare the mean values between types of donor

Table No 7

Clinical features	Type of donor	N	Mean	Std. Deviation	P-Value
HAM D	Living	39	10.13	4.780	0.807
	Cadaver	11	9.73	4.756	
HAM A	Living	39	9.28	3.494	0.932
	Cadaver	11	9.18	3.027	
TD 2	Living	39	57.74	13.172	0.736
	Cadaver	11	59.27	13.320	
TD 3	Living	39	55.59	12.283	0.450
	Cadaver	11	52.45	11.157	
TD 4	Living	39	53.03	17.719	0.194
	Cadaver	11	45.27	15.212	
TD 1	Living	39	54.92	14.631	0.983
	Cadaver	11	54.82	14.999	

Chart No - 10



There was no significant finding on applying independent sample T test on comparing the mean values between type of donor, either living or cadaver among cases.

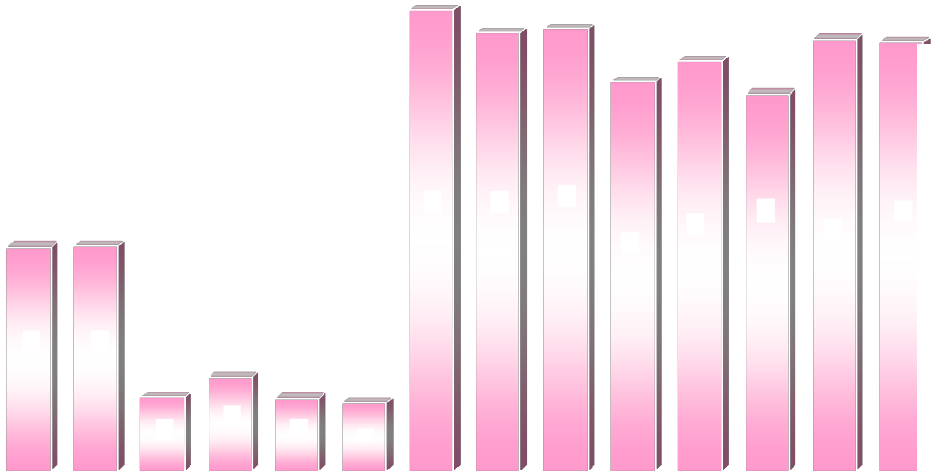
Independent samples t-test to compare the mean values between No. of rejection episodes

Table No 8

Clinical features	No. of rejection episodes	N	Mean	Std. Deviation	P-Values
HAM D	Nil	40	9.55	4.408	0.145
	1 or 2	10	12.00	5.676	
HAM A	Nil	40	9.40	3.463	0.562
	1 or 2	10	8.70	3.057	
TD 2	Nil	40	58.65	12.963	0.543
	1 or 2	10	55.80	14.022	
TD 3	Nil	40	56.25	11.624	0.113
	1 or 2	10	49.50	12.599	
TD 4	Nil	40	52.15	17.606	0.504
	1 or 2	10	48.00	16.780	
TD 1	Nil	40	54.98	14.783	0.943
	1 or 2	10	54.60	14.377	

There was no significant finding on applying independent sample T test on comparing the mean values between number of rejection episodes among cases.

Chart No - 11

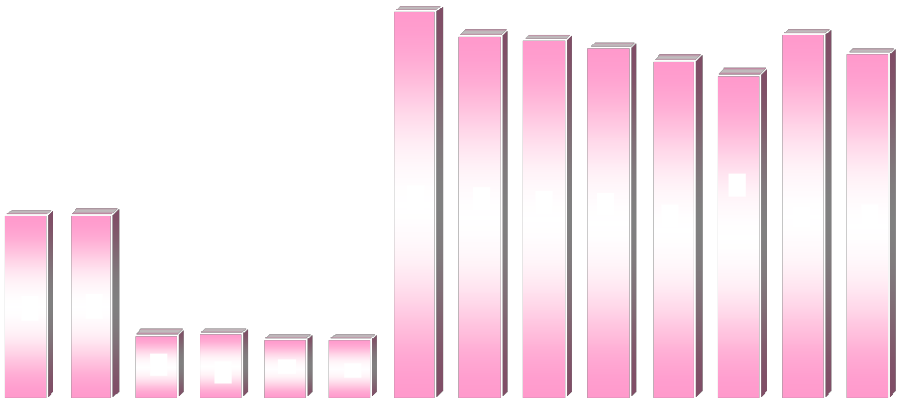


Independent samples t-test to compare the mean values between Complication of post op medications

Table No 9

	Complication of post op medications	N	Mean	Std. Deviation	P-Value
HAM D	Absent	22	10.00	4.504	0.958
	Present	28	10.07	4.981	
HAM A	Absent	22	9.18	3.290	0.886
	Present	28	9.32	3.486	
TD 2	Absent	22	60.18	11.245	0.319
	Present	28	56.43	14.349	
TD 3	Absent	22	55.55	11.521	0.740
	Present	28	54.39	12.559	
TD 4	Absent	22	52.50	17.281	0.675
	Present	28	50.39	17.675	
TD 1	Absent	22	56.50	13.244	0.497
	Present	28	53.64	15.635	

Chart No - 12



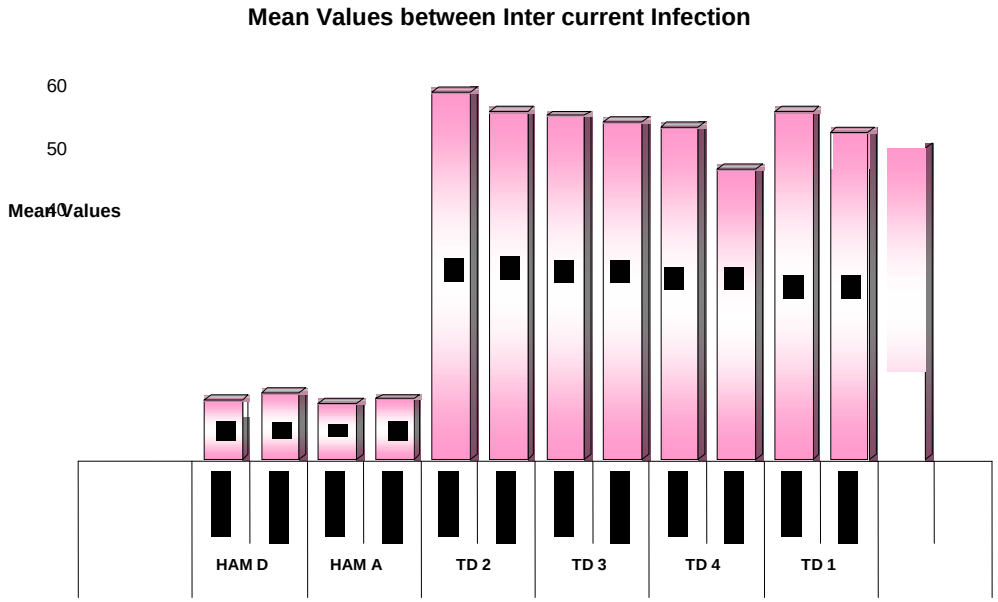
There was no significant finding on applying independent sample T test on comparing the mean values between complications of post operative medications among cases.

Independent samples t-test to compare the mean values between History of intercurrent infection

Table No 11

Clinical Features	History of inter current infection	N	Mean	Std. Deviation	P-Values
HAM D	Absent	34	9.65	4.618	0.397
	Present	16	10.88	5.005	
HAM A	Absent	34	9.00	3.542	0.432
	Present	16	9.81	2.994	
TD 2	Absent	34	59.06	12.615	0.446
	Present	16	56.00	14.222	
TD 3	Absent	34	55.24	10.589	0.803
	Present	16	54.19	14.945	
TD 4	Absent	34	53.44	15.607	0.211
	Present	16	46.81	20.403	
TD 1	Absent	34	56.03	13.449	0.430
	Present	16	52.50	16.892	

Chart No - 13



There was no significant finding on applying independent sample T test on comparing the mean values between histories of inter-current infection among cases.

DISCUSSION

The present study used HAM-D, HAM-A and WHOBREF questionnaire to evaluate depression, anxiety and the quality of life of the subjects respectively.

Various studies have been conducted to compare the psychiatric morbidity like depression and anxiety between the renal transplant recipients and patients on maintenance hemo-dialysis. The results of those studies were controversial.

One such study conducted in 2007 concluded that depression continued to remain in the post transplantation period as severe as in the pre transplantation period and our study had also derived results in line with the same.

Another similar case control study conducted in 2010 which compared anxiety, depression and emotional profile in renal transplant recipients with healthy subjects found no significant difference between the cases and controls in depression and anxiety but noted difference in their affective profile.

The present study differed from that of the previous studies and a significant difference was noted both in depression and anxiety between the transplant recipients and healthy subjects. Though transplantation offers the patients a chance to prolong their expectancy

of life and its quality, it does it at the expense of new worries such as fear of graft rejection, necessity to continue life long immunosuppressant medications, permanent life style changes etc.

When the socio demographic factors were analyzed, most of the patients who underwent renal transplantation were in the younger age, which was similar to the other such study findings. It was also studied previously that young age transplant recipients showed more anxiety levels.

Though it was not correlated so in the current study, if more number of cases were included, it might be possible to assess further and find the cause of anxiety in such young renal recipients. Nearly half of the cases (40 %) were unemployed which is twice that of those in controls which can be viewed as a result of their physical condition with psychiatric co morbidity that interferes with their productivity and dependence that made them dependent on their relatives and family. This can be evidenced from the observation of more number of recipients living in joint family compared to controls though there might be some other reasons for the same observation.

In the present study three fourth of patients were males. It replicates the same as in other studies conducted in renal transplant recipients. Some of the previous studies said that female gender was a

risk factor for depression among the transplant group, due to poor social support for females and the current study has to be conducted in more elaborative way to get such corroborative finding.

We noted that nearly half of the recipients had developed some complications due to immunosuppressant drugs including weight gain, cataract, insulin resistance, skin eruptions etc they were continuing drugs regularly and the reason being fear of rejection episodes in most of them.

A meta analysis showed that there was strong correlation between depression and drug adherence (DiMatteo et al., 2000) .But we have observed that there was not much disturbances in drug compliance in those depressed recipients.

In our study we found that the prevalence of anxiety in the patients were significant as evidenced by significant P value in the comparison between cases and controls, we noted good drug adherence in our study population in contrast to the fact from a study that reported that in addition to depression, anxiety of post transplant patients has influence on the drug compliance (Mart, 2006).

A study conducted in 2008 assessing the quality of life in patients undergoing hemodialysis using the same WHOQOL-BREF questionnaire which we have used in our study have found low scores

in the physical, psychological and social domains compared to normal healthy population and no changes in the environmental domain of the QOL. Our current study depicted a significant impairment in the environmental domain and without much significant changes in the physical, psychological and social domain in post transplant patients which may be due to improvement in the psychological and physical well being of the recipients secondary to a positive attitude of our patients on their life expectancies following transplantation.

These findings are consistent with the earlier published reports that showed those patients who underwent transplantation surgery had a positive view on their life, with a belief that transplantation would decrease their dependency and relieve them from frequent, invasive, costly dialysis procedures(Sathvik, Parthasarathi, Narahari, & Gurudev, 2008). Also India being a country with high values on family and social support compared to the western population that could have led to a good positive impact on the perceived health status of patients with improved psychological well being as a result of care and concern of the family towards the patient.

The environmental domain of QOL is mainly determined by the factors like financial status, employment, work place, accessibility to health care system, security, participation in leisurely activities. In our

study we found a significant impairment in the environmental domain of the QOL which might be secondary to disturbances in their employment status, ability to sustain the job following a chronic disease, accessibility to the hospital and decreased opportunities for them to participate in recreational activities.

LIMITATIONS:

Though we conducted the study with our utmost efficiency the results have to be viewed with some limitations.

The main limitation in the study is that relatively small numbers of subjects were included in the study.

Though there was significant difference in the depressive score when correlated with the presence of co morbid conditions, only a very small percentage of study sample had co morbid medical illnesses. It goes along with the previous studies which have reported that the presence of co morbid conditions increases the depression scores.

This study is a cross sectional case control study. A prospective study will be more fruitful while analyzing various clinical correlates with depression.

Also if the number of the sample is more, data could have be analyzed in more detail and significance could have been obtained in the previous studied factors like positive correlation between depression and drug adherence, depression with co-morbid conditions, depression with time spent on dialysis before transplantation i.e, waiting period .

Another limiting factor is that the study has been conducted in a single hospital. So the results observed in this study could not be representative of general population and it could not be generalized without further considerations.

Also due to practical difficulties faced during the study, randomization could not be done, which becomes another limitation in validating the results.

There is also a possibility of bias in selection of patients which could be one of the reasons for getting very good drug compliance among the recipients, since only the patients attending the review out patient department of nephrology were studied. If those who had been hospitalized in the post transplantation period either for rejection episodes or acute illness were also included, the values could be lower than this. The reasons for non-compliance in them, if any could have been studied in detail and correlated with depression scores.

One another limitation factor is that pre transplantation psychological assessment was not done for the recipients in our study, which is a predictable factor for the occurrence of psychiatric morbidity following stressful surgical transplant procedure.

Since it is a well studied factor in several studies that renal transplant recipients have higher prevalence of depression and anxiety than general population, and an objective assessment was done with the scales for depression and anxiety , there is a possibility of expectation bias in this study.

FUTURE DIRECTIONS:

The present study is only a cross sectional study. The patients have to be analyzed prospectively for correlating various clinical parameters with the mental status of the patient. Since in the current scenario , many patients undergo renal transplantation at a very younger age, treating depression and other psychiatric co-morbidity in their post transplantation period, not only improves the drug adherence , thereby graft survival, but also the quality of their remaining part of life, their functioning capacity, employment status, family support and even marital functions.

Since it has been reported in some studies that the tedious renal transplant procedure leads on to depression even in their spouses because of care giver burden, which affects their entire family life, spouse should be educated regarding such issues in the pre transplantation period and to prepare them mentally to face such challenges.

The treating clinicians should be extra cautious both in diagnosing and in treating psychiatric morbidity at the right time for an adequate period . Sometimes it can even be life saving since cases of suicide have been reported in the post transplantation period. It is a real tragedy that for a transplant procedure not only high cost is spent but

also the live donor faces extra risk. Either pharmacological measures such as antidepressant medications or pharmacological measures like psychotherapy, cognitive behaviour therapy can be tried in eligible candidates. In future, research has to be conducted in such areas to find out if non pharmacological measures are equally efficacious in such patients, to avoid drug interactions in them.

Studies have to be carried out in further clarifying the relationship between certain psychosocial factors and psychiatric co-morbidity, to point out the patients who are vulnerable to develop psychiatric illness in the post operative period so that additional assessment can be done, and symptoms can be treated earlier.

Not only pre-transplant psychiatric assessment of the candidates, but also screening and periodic reassessment of the recipients systematically using diagnostic interviews or validated assessment tools is of vital importance. Also measures have to be taken for proper referral of the patient to specialist care, consultation-laison psychiatrist for appropriate management and follow up.

CONCLUSION:

This study was conducted in a tertiary care centre assessing the patients after 6 months of post renal transplant for psychiatric co-morbidity like anxiety, depression and also quality of life in the patients with strict methodology .Even though the study has its own limitation we could conclude from the study that patients after successful renal transplant inspite of devoid of life threatening complications have significant amount of depression and anxiety features and impairment in environmental domain of quality of life .

This finding has to be seriously considered in future to regularly follow up these patients with periodic assessment for psychological co-morbidity and consider appropriate intervention through effective consultation liaison process as this would help the patients who came out of a terminal end stage illness.

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ஆராய்ச்சி தகவல் தாள்

ஆய்வாளர் :

பங்கேற்பாளர் பெயர் :

தலைப்பு :

ஆராய்ச்சியின் நோக்கம் :

தாங்கள் இந்த மருத்துவ ஆய்வில் கலந்து கொள்ளுமாறு அழைக்கிறோம். இந்த ஆய்வானது எந்தவொரு மருத்துவ தலையீடும் இல்லாதது.

இதில் உங்களுக்கு எந்தவொரு ஆதாயமோ அல்லது ஆபத்தோ இருக்காது.

எங்கள் மையத்தில் நடைபெற இருக்கும் ஓர் ஆராய்ச்சிக்கு உங்கள் ஒத்துழைப்பும், ஒப்புதலையும் வேண்டுகிறோம்.

முடிவுகளை அல்லது கருத்தகளை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின்போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிட மாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த சிறப்புப் பரிசோதனைகளின் முடிவுகளை ஆய்வின் முடிவின்போது தங்களுக்கு அறிவிப்போம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஒப்புதல் படிவம்

_____என்பவரின் மகனாகிய _____

என்னும் நான் "மன நோயின் மனசோர்வின் அறிகுறிகள் தென்படுதலும் அதன் தன்மையும்" பற்றிய தன்னார்வருக்கான தகவல் தாளை படித்துள்ளேன். இந்த ஆய்வில் பங்குபெற நான் தகுதி உள்ளவர் என்று ஆய்வாளர்கள் முடிவெடுத்தால், நான் ஆய்வில் பங்கு பெருவேன். மேலும் ஆராய்ச்சி நிபுணர்களுடன் இந்த ஆய்வின் நோக்கம், இதன் வழிமுறைகள் எதிர்நோக்கும் பயங்கள், பாதுகாப்பு வழிமுறைகள், ஆய்வு பாடங்களை குறித்தும், உரிமைகளைக் பாதுகாப்பது குறித்தும் கலந்துரையாடியுள்ளேன். எனக்கு எழும் கேள்விகளைக் கேட்டு அவற்றிற்கு திருப்திகரமான பதில்கள் அளிக்கப்பட்டது, எழுத்து மூலமாகவும் பதில்கள் அளிக்கப்படும் என்பதை புரிந்து கொண்டுள்ளேன்.

எனது விருப்பத்தின் பேரிலேயே நான் இந்த ஆய்வில் பங்கேற்கிறேன். என்னால் இதில் பங்கேற்காமல் விலகிக் கொள்ளவும் செய்யலாம் என்பதை புரிந்து கொண்டுள்ளேன். மேலும் எந்த ஒரு காரணத்திற்காகவும், இந்த ஆய்விலிருந்து என்னால் நான் விருப்பப்பட்டால் விலகிக் கொள்ள முடியும் என்பதையும் அறிந்துள்ளேன்.

இந்த ஆய்வில் நான் ஒரு ஆய்வு செய்யப்படும் நபராக இருந்தால் எனது உரிமைகள் குறித்து ஏதேனும் கேள்விகள் எழும்பினால். நான் ஆராய்ச்சியாளர்களை எந்த நேரமும் தொடர்பு கொண்டு சந்தேகங்களை நிவர்த்தி செய்து கொள்வேன்.

மேலும் இந்த ஆய்வில் ஒரு பங்கேற்பாளர் என்ற முறையில் சட்டத்திற்கு தேவைப்படும் சந்தர்ப்பங்களைத் தவிர பிற சமயங்களில் இந்த ஆய்வுத் தொடர்பான எனது அடையாளம் மருத்துவ ஆவணங்கள் மற்றும் தகவல்கள் ரகசியமாக வைக்கப்பட்டிருக்கும் என்பதை நான் அறிந்துகொண்டுள்ளேன்.

இந்த ஆய்வு மற்றும் இதிலுள்ள பயன்கள் குறித்து அனைத்து தகவல்களையும் நான் முழுமையாக அறிந்துகொண்டு, அதன்படி ஆய்வு வழிமுறைகளை மேற்கொள்ள நான் ஒப்புதல் அளிக்கிறேன். இந்த ஒப்புதல்படிவத்தில் நகல் ஒன்றினை நான் பெற்றுக்கொண்டேன்.

பங்கேற்பாளர் பெயர் :

கையொப்பம் :

நாள் :

முதன்மை ஆய்வாளர் :

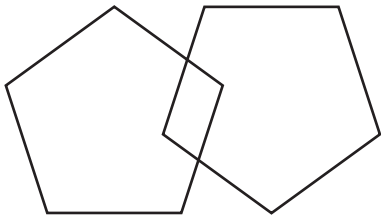
கையொப்பம் :

நாள் :

The Mini-Mental State Exam

Patient_____ Examiner _____ Date_____

Maximum	Score	
		Orientation
5	( )	What is the (year) (season) (date) (day) (month)?
5	( )	Where are we (state) (country) (town) (hospital) (floor)?
		Registration
3	( )	Name 3 objects: 1 second to say each. Then ask the patient all 3 after you have said them. Give 1 point for each correct answer. Then repeat them until he/she learns all 3. Count trials and record. Trials _____
		Attention and Calculation
5	( )	Serial 7's. 1 point for each correct answer. Stop after 5 answers. Alternatively spell "world" backward.
		Recall
3	( )	Ask for the 3 objects repeated above. Give 1 point for each correct answer.
		Language
2	( )	Name a pencil and watch.
1	( )	Repeat the following "No ifs, ands, or buts"
3	( )	Follow a 3-stage command: "Take a paper in your hand, fold it in half, and put it on the floor."
1	( )	Read and obey the following: CLOSE YOUR EYES
1	( )	Write a sentence.
1	( )	Copy the design shown.



_____ Total Score

ASSESS level of consciousness along a continuum _____

Alert Drowsy Stupor Coma

"MINI-MENTAL STATE." A PRACTICAL METHOD FOR GRADING THE COGNITIVE STATE OF PATIENTS FOR THE CLINICIAN. *Journal of Psychiatric Research*, 12(3): 189-198, 1975. Used by permission.

Hamilton Anxiety Scale (HAM-A)

Identifier | Date

This is a practitioner-rated form. Please rate each statement and select a number 0, 1, 2, 3 or 4 which indicates symptoms severity over the past week. This assessment is not intended to be a diagnosis.

0 = None 1 = Mild 2 = Moderate 3 = Severe 4 = Very severe

1	ANXIOUS MOOD - worries, anticipates the worst	0
2	TENSION - startles, restless, cries easily, trembling	0
3	FEARS - of the dark, strangers, being alone, animals, crowds	0
4	INSOMNIA - Difficulty falling asleep or staying asleep, nightmares	0
5	INTELLECTUAL - Poor concentration, memory, decision making ability	0
6	DEPRESSED MOOD - decreased interest in activities, anhedonia, insomnia	0
7	SOMATIC COMPLAINTS: MUSCULAR - muscle aches or pains, bruxism	0
8	SOMATIC COMPLAINTS: SENSORY - tinnitus, blurred vision, tingling, numbness	0
9	CARDIOVASCULAR - tachycardia, palpitations, chest pain, feeling faint	0
10	RESPIRATORY SYMPTOMS - chest pressure, choking, shortness of breath	0
11	GASTROINTESTINAL - dysphagia, nausea or vomiting, constipation, weight loss, abdominal fullness, 'sinking' feeling in abdomen, dyspepsia	0
12	GENITOURINARY - urinary frequency or urgency, dysmenorrhoea, impotence	0

13	AUTONOMIC - dry mouth, flushing, pallor, sweating, dizziness	0
14	BEHAVIOUR AT INTERVIEW - fidgets, tremor, paces	0

Somatic	**0**
Psychic	**0**
Total Score	**0**

Print Form Clear Form

Normal range	Mild	Moderate	Severe
0 - 13	14 - 17	18 - 24	25 and over

The HAM-A is administered by an interviewer who asks a series of questions related to symptoms of anxiety. The interviewer then rates the individual on a five-point scale for each of the 14 items. Seven of the items specifically address psychic anxiety and the remaining seven items address somatic anxiety. The total anxiety score ranges from 0 to 56, lower scores are better. Privacy - please note - this form does not transmit any information about you or your assessment scores. If you wish to keep your results, either print this document or save this file locally to your computer. If you click 'save' before closing, your results will be saved in this document. These results are intended as a guide to your health and are presented for educational purposes only. They are not intended to be a clinical diagnosis. If you are concerned in any way about your health, please consult with a qualified health professional.

Hamilton, M. The Assessment of Anxiety States by Rating. Br. J. Med. Psychol. 1959; 32:50–55

Hamilton Depression Rating Scale[1,2] (HAM-D) also HDRS or HRSD

Identifier Date

This is a practitioner-rated form. Please rate each statement and select a number 0, 1, 2, 3 or 4 which indicates symptoms severity over the past week. This assessment is not intended to be a diagnosis.

4-item 0 = Absent 1 = Mild 2 = Moderate 3 = Severe 4 = Very Severe

2-item 0 = Absent 1 = Mild 2 = Definite

1 DEPRESSED MOOD - Sad, hopeless, helpless, worthless
0 = Absent
1 = Gloomy attitude, pessimism, hopelessness
2 = Occasional weeping
3 = Frequent weeping
4 = Patient reports virtually only those feeling states in his / her spontaneous verbal and non-verbal communication

2 FEELINGS OF GUILT
0 = Absent
1 = Self reproach, feels he / she has let people down
2 = Ideas of guilt or rumination over past errors or sinful deeds
3 = Present illness is punishment
4 = Hears accusatory or denunciatory voices and / or experiences, threatening visual hallucinations. Delusions of guilt

3 SUICIDE
0 = Absent
1 = Feels life is not worth living
2 = Wishes he / she were dead or any thoughts of possible death to self
3 = Suicide, ideas or half-hearted attempt
4 = Attempts at suicide (any serious attempt rates 4)

4 INSOMNIA [Early]
0 = No difficulty falling asleep
1 = Complains of occasional difficulty falling asleep; i.e. more than ½ hour
2 = Complains of nightly difficulty falling asleep

5 INSOMNIA [Middle]
0 = No difficulty
1 = Patient complains of being restless and disturbed during the night
2 = Waking during the night: any getting out of bed rates 2 (except for voiding)

6 INSOMNIA [Late]
0 = No difficulty
1 = Waking in early hours of the morning but goes back to sleep
2 = Unable to fall asleep again if he / she gets out of bed

7 WORK & ACTIVITIES

0 = No difficulties
1 = Thoughts and feelings of incapacity related to activities, work and hobbies
2 = Loss of interest in activity, hobbies or work either directly reported by patient, or indirectly seen in listlessness, indecision and vacillation (feels he / she has to push self to work or activities)

8 RETARDATION

Slowness of thought and speech; impaired ability to concentrate, decreased motor activity
0 = Normal speech and thought
1 = Slight retardation at interview
2 = Obvious retardation at interview
3 = Interview difficult
4 = Interview impossible

9 AGITATION

0 = None
1 = Fidgeting
2 = Playing with hands, hair, obvious restlessness
3 = Moving about, can't sit still
4 = Hand wringing, nail biting, hair pulling, biting of lips, patient is 'on the run'

10 ANXIETY [Psychic]

Demonstrated by: Subjective tension and irritability, loss of concentration, worrying about minor matters, apprehension, fears expressed without questioning, feelings of panic, feeling jumpy
0 = Absent
1 = Mild
2 = Moderate
3 = Severe
4 = Incapacitating

11 ANXIETY [Somatic]

Physiological concomitants of anxiety, e.g. dry mouth, wind, indigestion, diarrhoea, cramps, belching, palpitations, headaches, hyperventilation, sighing, urinary frequency, sweating, giddiness, blurred vision, tinnitus
0 = Absent
1 = Mild
2 = Moderate
3 = Severe
4 = Incapacitating

12 SOMATIC SYMPTOMS [Gastrointestinal]

0 = None
1 = Loss of appetite but eating without staff encouragement
2 = Difficulty eating without staff urging. Requests or requires laxatives or medication for GI symptoms

13 SOMATIC SYMPTOMS [General]

0 = None
1 = Heaviness in limbs, back or head, backaches, headaches, muscle aches, loss of energy, fatigability
2 = Any clear-cut symptom rates 2

14 GENITAL SYMPTOMS

Symptoms such as loss of libido / menstrual disturbances
0 = Absent
1 = Mild
2 = Severe

15 HYPOCHONDRIASIS

0 = Not present
1 = Self absorption (bodily)
2 = Preoccupation with health
3 = Strong conviction of some bodily illness
4 = Hypochondriacal delusions

16 LOSS OF WEIGHT

0 = No weight loss
1 = Probable weight loss associated with present illness
2 = Definite (according to patient) weight loss

17 INSIGHT

0 = Acknowledges being depressed and ill
1 = Acknowledges illness but attributes cause to bad food, overwork, virus, need for rest, etc.
2 = Denies being ill at all

18 DIURNAL VARIATION

18(a). Note whether symptoms are worse in morning or evening.
If no diurnal variation, mark 'none'
0= No variation
1= Worse in A.M.
2= Worse in P.M.

18(b). When present, mark the severity of the variation. Mark 'None' if no variation
0= None
1= Mild
2= Severe

19 DEPERSONALIZATION AND DEREALIZATION

(e.g. feelings of unreality; nihilistic ideas)
0= Absent
1= Mild
2= Moderate
3= Severe
4= Incapacitating

20 PARANOID SYMPTOMS

0= None
1= Suspicious
2= Ideas of reference
3= Delusions of reference and persecution

21 OBSESSIONAL AND COMPULSIVE SYMPTOMS

0= Absent
1= Mild
2= Severe

Print Form Clear Form Total Score

The Hamilton Depression (HAM-D) Rating Scale provides an indication of depression and, over time, a guide to recovery. It is one of the most widely used and accepted outcome measures for evaluating the severity of depression symptoms. The HAM-D was designed to be administered by a trained professional using a semi-structured interview. Even though Hamilton provided no specific guidelines regarding the administration and scoring of the scale, nor any standardised questions for eliciting information from patients, high inter-rater reliability has been observed.[3] A structured interview guide is available which has been shown to improve reliability further [4]. Several versions of the HAM-D are available, some with additional questions (which are not scored). The HAM-D is also known as the HAM-D_{17}, HRSD and the HDRS. Although this version of the HAM-D lists 21 items, only the first 17 are scored. The remainder provide additional clinical information. It takes about 20 minutes to complete the interview and score the results. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine items are scored from 0 - 2. Sum the total of the first seventeen items to arrive at the total score.

Normal	Mild	Moderate	Severe	Very Severe
0 - 7	8 - 13	14 - 18	19 - 22	>=23

Privacy - please note - this form does not transmit any information about you or your assessment scores. If you wish to keep your results, either print this document or save this file locally to your computer. If you click 'save' before closing, your results will be saved in this document. These results are intended as a guide to your health and are presented for educational purposes only. They are not intended to be a clinical diagnosis. If you are concerned in any way about your health, please consult with a qualified health professional.

Document Version: 1.1
Last Updated: 28 November 2010
Planned Review: 28 November 2015

1. Hamilton, M. J. (1960). Neurology Neurosurgery and Psychiatry. Vol. 23: p. 56–62.

2. Bech, P. (1996). The Bech, Hamilton and Zung Scales for Mood Disorders: Screening and Listening. 2nd Ed. Berlin: Springer-Verlag p. 43–52.

3. Müller, M.J. & Dragicevic, A. (2003). Journal of Affective Disorders. Vol. 77(1) p. 65–9.

4. Williams, J.B.W. (1988). A Structured Interview Guide for the Hamilton Depression Rating Scale. Archives of General Psychiatry, American Medical Association, August 1988, Vol. 45, Num. 8, p. 742-747.

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

_____

_____

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 ☐ + ☐ + ☐	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:

* See Procedures Manual, pages 13-15

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No : 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr. G.R. Kurinji
PG in MD Psychiatric Medicine
Madras Medical College, Chennai -3

Dear Dr. G.R. Kurinji

The Institutional Ethics committee of Madras Medical College, reviewed and discussed your application for approval of the proposal entitled "Study of anxiety, depression, quality of life and its clinical correlates in renal transplant recipients" No.03082012.

The following members of Ethics Committee were present in the meeting held on 10/08/2012 conducted at Madras Medical College, Chennai -3.

1. Dr. S.K. Rajan. M.D.,FRCP.,DSc	-- Chairperson
2. Prof. Pregna B. Dolia MD Vice Principal, Madras Medical College, Chennai -3 Director , Institute of Biochemistry, MMC, Ch-3	-- Member Secretary
3. Prof. B. Vasanthi MD Prof of Pharmacology ,MMC, Ch-3	-- Member
4. Prof. C. Rajendiran, MD Director , Inst. Of Internal Medicine, MMC, Ch-3	-- Member
5. Prof. S. Deivanayagam MS Prof of Surgery, MMC, Ch-3	-- Member
6. Thiru. S. Govindsamy. BABL	-- Lawyer
7. Tmt. Arnold Soulina MA MSW	-- Social Scientist

We approve the proposal to be conducted in its presented form.

Sd/ Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, and SAE occurring in the course of the study, any changes in the protocol and patients information / informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee

PROFORMA

RCC No:

A – SOCIODEMOGRAPHIC DATA

- Name :
- Age :
- Sex :
- Education : Nil/School SSLC/HSC/Graduate/PG/Professional
- Occupation : Unemp Semi Skilled / Skilled / Professional
- Income :
- Marital Status : Unmarried / Married/Single/Separated/Divorced/Widow
- Address : Urban/Rural
- Religion : Hindu / Muslim/Christian/Others
- Family Type : Nuclear/Joint

B – ILLNESS DETAILS

- Cumulative end-stage renal disease time (mo)
- Number of comorbid conditions: 0 / 1 or 2 / ≥ 3
- Time on dialysis before transplant (mo)
- Transplant vintage (mo)
- Type of donor: living / cadaver
- Number of rejection episodes: 0 / 1 or 2 / ≥ 3
- Complication of Postoperative medications:
  Immunosupressants/ Steroids.
- Drug compliance (Good, poor)
- H/O intercurrent infection:
- Laboratory records: serum creatinine: _ ,

- Other details (if any)

C- PAST HISTORY

- Mental illness – Y/N ; Treatment :Y/N
- Medical illness – Y/N ; Treatment :Y/N
- Suicidal attempt / gestures

D- FAMILY HISTORY

- Type of family – living alone / Nuclear /Joint
- Family H/o of mental illness / Suicide / Alcohol abuse / Similar illness.

E-PERSONAL HISTORY

- Birth & Development history
- Menarche – age Menopause:
- Married Y/N
- Children Y/N
- Smoker Y/N
- Alcoholic Y/N
- Ganja Y/N
- Other substance use / abuse/dependence
- Sexual dysfunction – absent / present
  (Frequency reduced / abstinent)

F- PREMORBID PERSONALITY

G – MENTAL STATUS EXAM

- Conscious : Y/N
- Rapport : Good/Possible/Not Possible
- Gaze Contact : Maintained / Possible/ Not possible
- Dressing and grooming: Adequate/Average/Poor
- Psychomotor activity : Increased/Normal/Decreased
- Attention : Aroused/Not aroused
- Concentration : Sustained/ Not sustained
- Memory : Immediate Y/N / Recent Y/N / Remote Y/N
- Orientation : Y/N / Place: Y/N / Person: Y/N

TALK

- Quantum : Decreased /Normal/Increased
- Tone : Decreased/Normal/Increased
- Tempo : Decreased/Normal/Increased
- Reaction time : decreased/Normal/Increased
- Prosody : Maintained/Not maintained
- Relevant : Y/N
- Coherent : Y/N

THOUGHT

- Formal thought disorder Y/N (Please specify)
- Delusions : Y/N (Please Specify)
- Hallucination : Y/N (Please Specify)
- Depressive ideas : Y/N
- Suicidal ideation : Y/N

MOOD

INSIGHT

Absent / Partial /Present

Physical Examination

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THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY,

CHENNAI, TAMILNADU.

MADRAS MEDICAL COLLEGE, CHENNAI.

Dissertation on

"STUDY OF ANXIETY , DEPRESSION, QUALITY OF LIFE AND ITS CLINICAL CORRELATES IN RENAL TRANSPLANT RECIPIENTS"

Submitted for M.D Degree Examination

BRANCH – XVIII

[PSYCHIATRY]

April 2013

Match Overview

1	Perez-San-Gregorio, Publication	1%
2	Pascazio, L.. "Anxiety... Publication	1%
3	selectivepressure.me Internet source	1%
4	www.sfu.ac.at Internet source	1%
5	Submitted to National ... Student paper	1%
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8	Jindel, R.. "Noncompli... Publication	1%
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PAGE: 1 OF 101

Text-Only Report